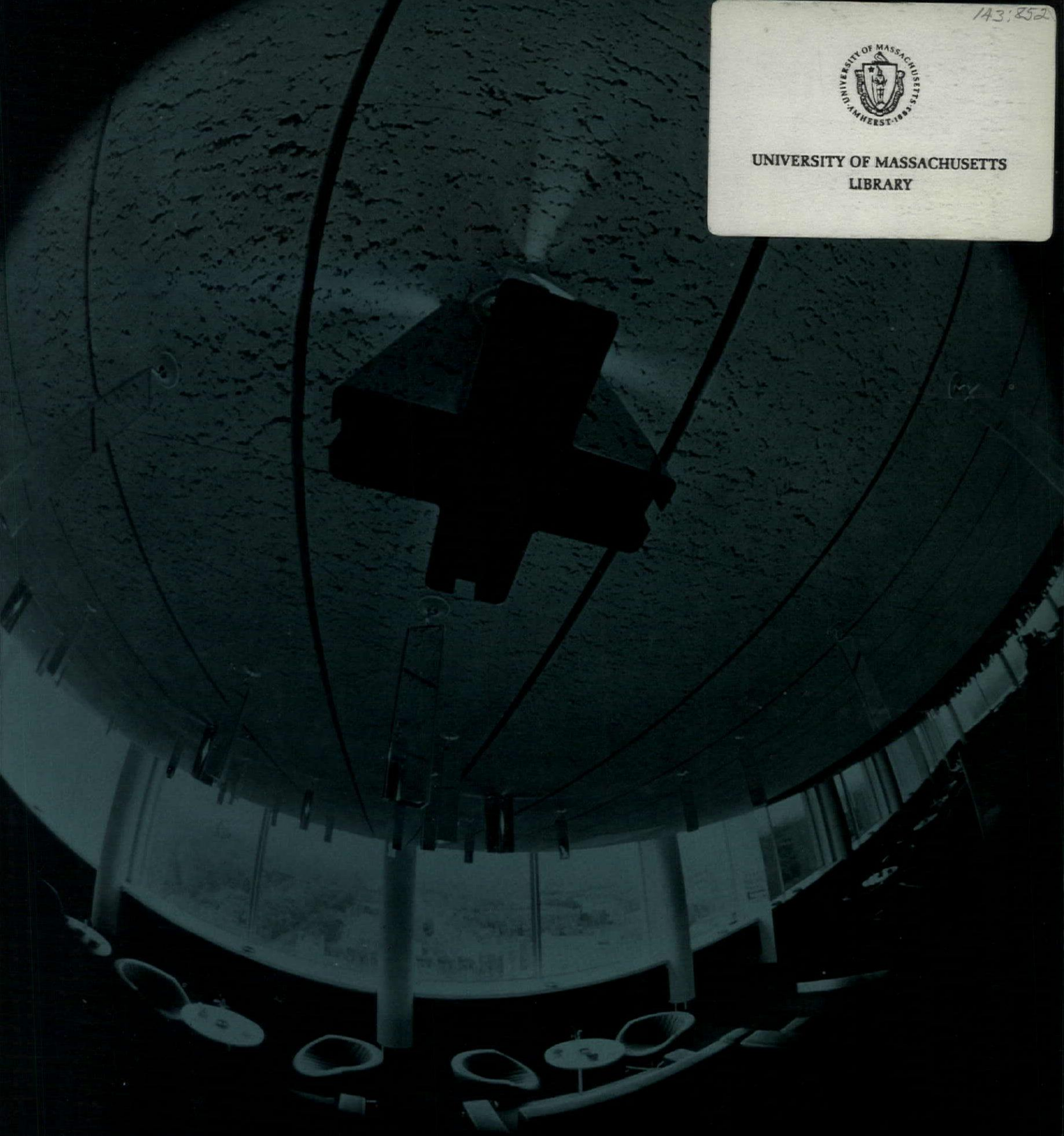


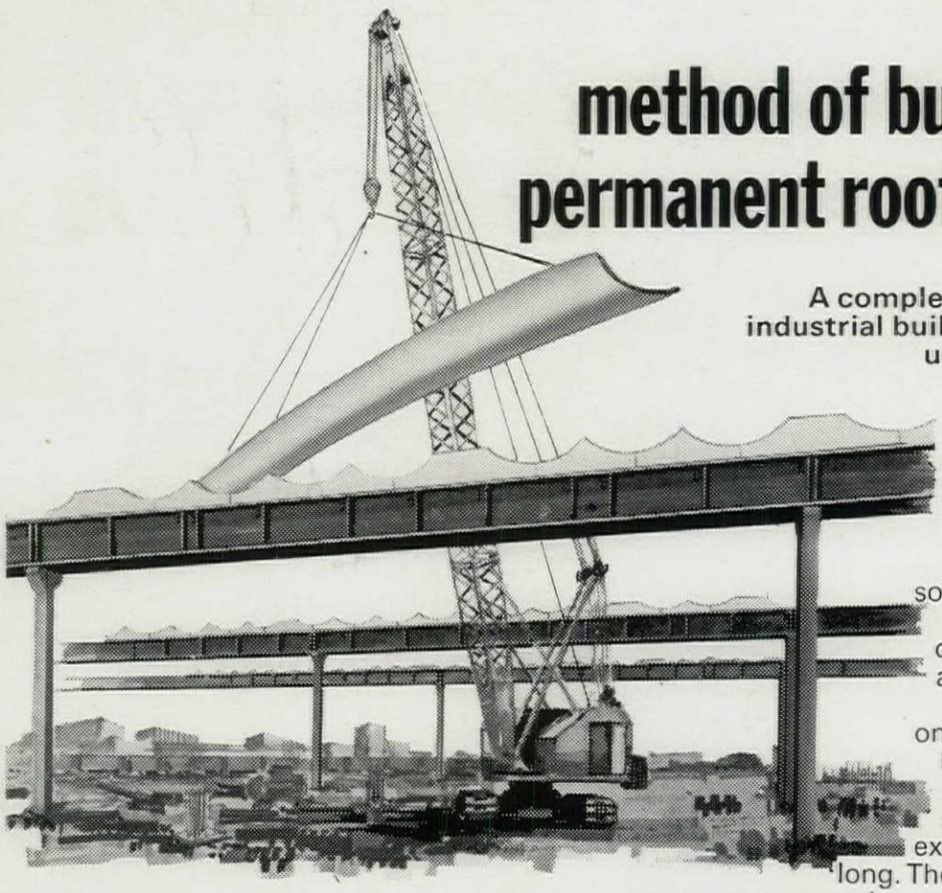
ARCHITECTURAL REVIEW VOLUME CXLIII NUMBER 852 FEBRUARY 1968 FIVE SHILLINGS

AR

simple...low cost... permanent roofing

HYPA ROOF UNITS

the quickest, simplest and cheapest method of building a strong permanent roof over any area



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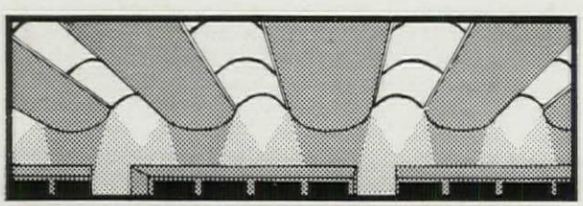

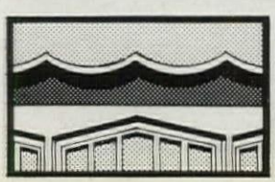

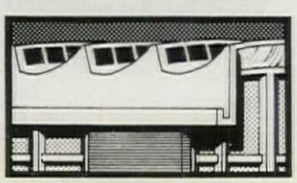

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[1]A trade name of Aluminum Company of America [2]A trade name of Alcan (U.K.) Limited
[3]Registered trade mark of Alcan Industries Ltd [4]Registered trade mark of Kaiser Aluminum and Chemical Corporation.

Norwich Union Insurance Group building, Leeds. Architects: Harry W. Weedon and Partners. Consulting Engineers: Sir Frederick Snow and Partners. Main Contractor: Tersons Ltd. Aluminium windows and curtain walling by Boulton & Paul (Metal Windows) Ltd.

Acorn Anodising Company Limited, Bilton Road, Bletchley, Bucks. Telephone: Bletchley 5151

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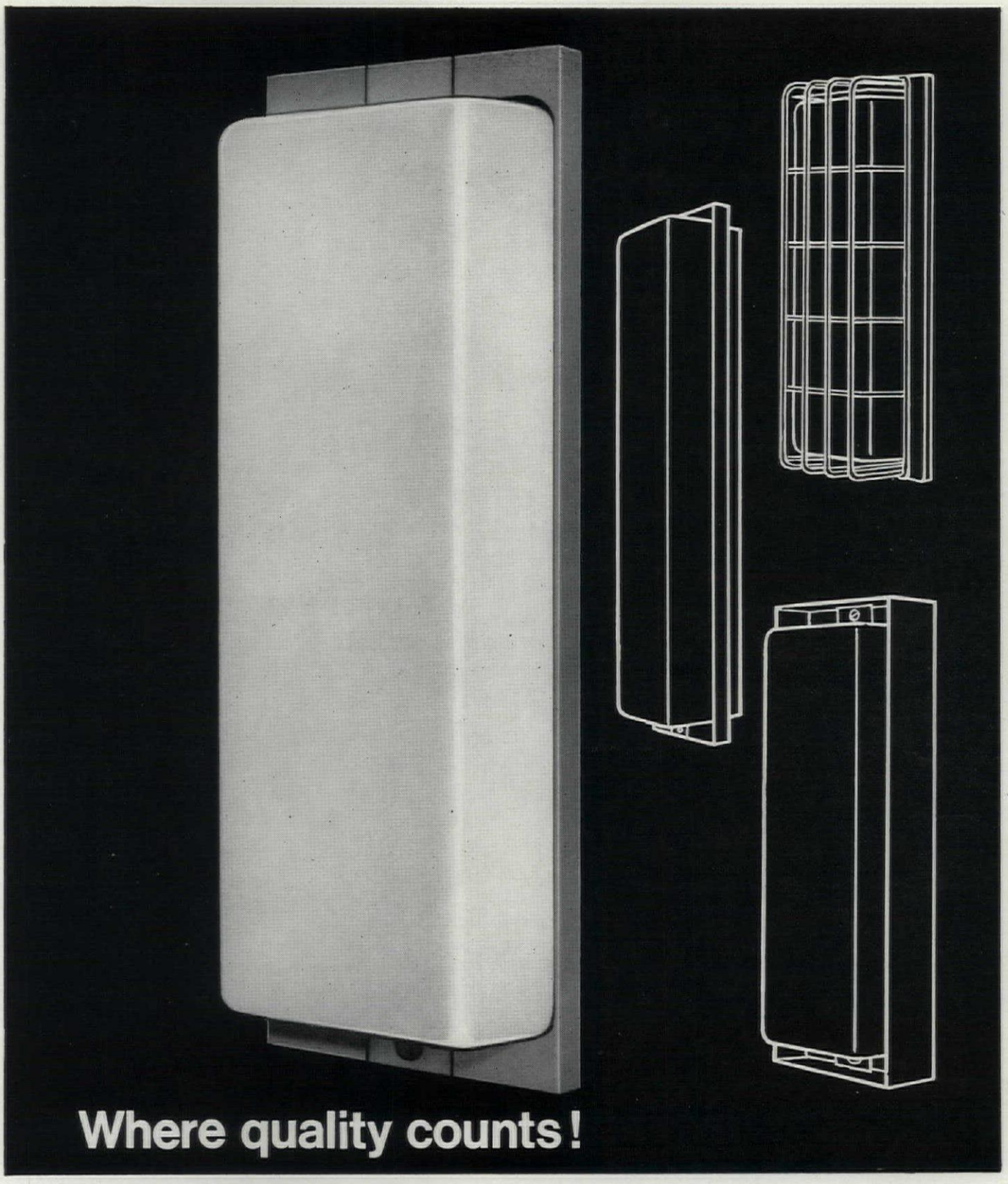
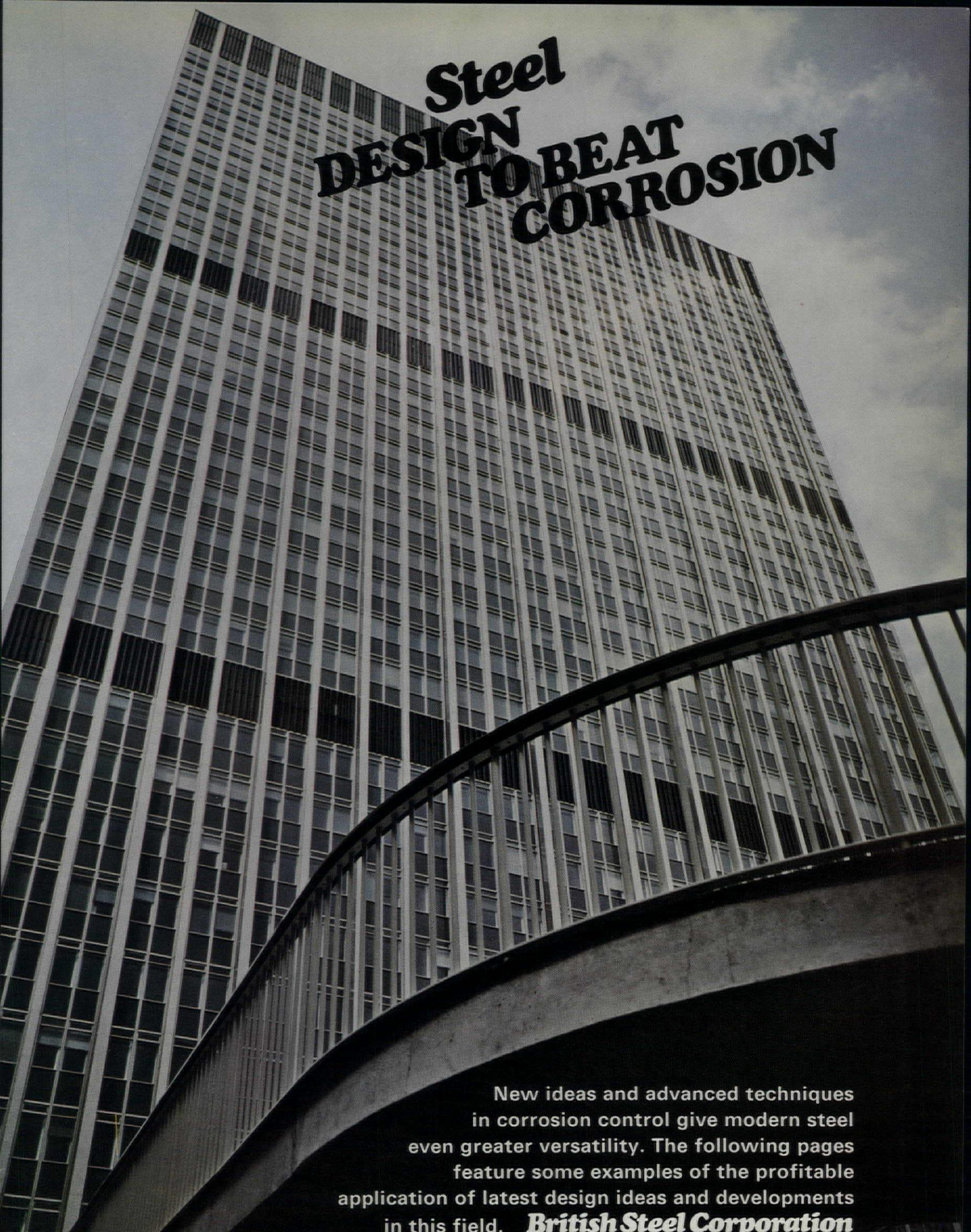


The Churchouse range of fluorescent bulkheads is specified by more leading architects, contractors and authorities than any other make. Proved in service throughout the country these bulkheads offer a dependable lighting system with an almost negligible maintenance cost. Available in two basic versions for 12″ or 21″ lamps. A wide variation of these fittings is offered to house one, two or three lamps, in recessed, flush or corner mounted fixings.
Optional extras include matt black surrounds, wire guards and alternative emergency lighting systems.

For further information contact

C. M. Churchouse Ltd, Lichfield Road, Brownhills, Staffs. Tel: Brownhills 3551-6.



New ideas and advanced techniques in corrosion control give modern steel even greater versatility. The following pages feature some examples of the profitable application of latest design ideas and developments in this field.

British Steel Corporation

Design to beat corrosion—at the drawing board stage. A highly effective means of combating corrosion is to 'design out' all features likely to promote it. Rounded contours and corners are preferable. Crevices which trap moisture and dirt should either be avoided completely, filled by welding or use of mastic paste. Provision of adequate drain holes can also eliminate collection of water and dirt. Joints and fastenings can be arranged to give clean uncluttered lines. Welded-in bulkheads at ends of box-section girders inhibit internal corrosion. Versatile tubular steel in the form of Circular, Square, or Rectangular Hollow Sections, can help the designer to avoid sharp edges which are prone to damage and cannot be evenly coated for corrosion protection. Suitable maintenance systems to achieve maximum economical service life must be planned *at the design stage* and all surfaces needing future attention should be readily accessible.

New steel products and better coatings. 'Pre-finished' corrosion-protected steel sheet with p.v.c. laminate, plastic or paint colour-coatings can now be easily formed into products that need no expensive finishing. Available coated on both sides and also pre-galvanized, these pre-finished sheets are economically produced on continuous process lines and are now available in *any practical length.* In steel sheet cladding and roof decking applications, erection is thus speeded and costly site painting eliminated. The physically strong decorative coatings employed, which include alkyds, acrylics, p.v.c. and other high adhesion paints and plastics, provide excellent long-life barriers often equivalent in thickness to *seven normal coats of paint.* Dip coating of steel products also imparts tough, smooth adherent nylon, p.v.c. or polythene surfaces to combat rust or chemical attack. Modern calcium plumbate paints react to create an excellent bond when used on galvanized or other zinc coated steel surfaces. Other paints based on coal-tar epoxides, polyurethane, vinyl co-polymers, Neoprene or Hypalon, can also be used to give enduring protection and decoration. And in the finishing of large steel structures, the excellent barrier properties of micaceous iron oxide are also now being exploited.

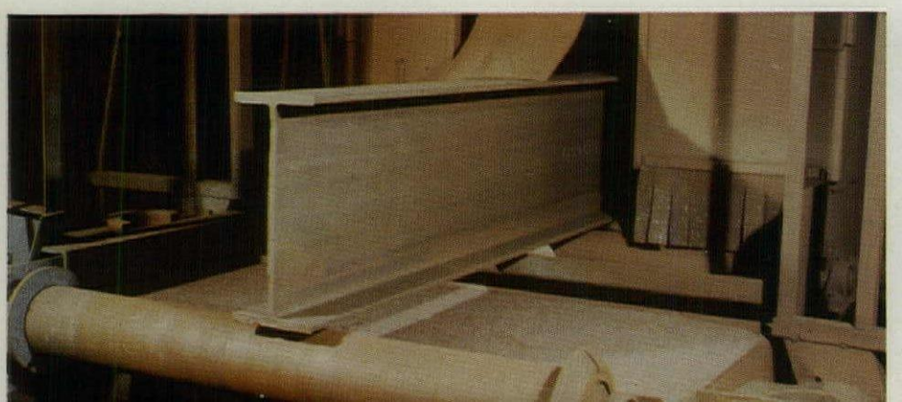
Special steels and anti-corrosion measures extend service life economically. Various grades of Stainless Steel, and low-alloy steels such as Cor-Ten, can often be employed very economically today, to combat corrosive attack and maintain good appearance. They are particularly suitable where protective coatings are impractical or when regular maintenance attention will be uneconomic. Their high-strength properties are also useful in design. Higher first cost will often be well justified by long-term reduction of maintenance costs. Important anti-corrosion methods and steel finishes that also assist good design, by resisting rust and extending service life, include highly effective hot-dip galvanizing, vitreous enamelling, spray-coating or electro-deposition of anodic metals such as zinc or aluminium. These methods give mild steel suitable rust-protection for a wide range of uses and meet a variety of different service conditions.

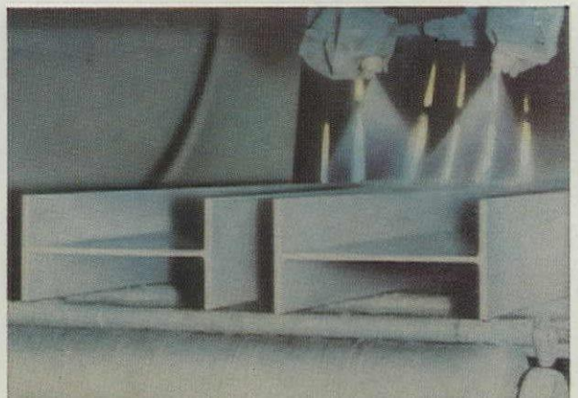
Surface preparation—key to top protection. Effective life of protective schemes is increased five-fold when mill-scale and residual rust are first thoroughly removed from steel by blast-cleaning or pickling rather than by ineffectual weathering and wire-brushing. Today, blast-cleaned and shop-primed steel plates and sections can be supplied by rolling mills, steel stockholders and fabricators. The quick-drying prefabrication primers, sealing, and rust-inhibiting coatings now used permit rapid handling, economical and efficient shop treatment of the steel by automatic plants under ideal, controlled conditions. The primed steel can be safely flame-cut and welded.

Modern answers to problems of corrosion mean more scope for imaginative design in Steel

New ideas and improved techniques in corrosion control, special steels and newly-developed steel products together provide more efficient, cost-saving answers to every type of corrosion problem today. Developments and anti-corrosion measures described in these pages are succeeding dramatically in giving longer useful service life to steel components, products and structures, together with the advantages of lower maintenance costs or the elimination of maintenance altogether. Designers and manufacturers are profiting by the steel industry's investments in research and new plant. The results—in better defences against corrosive attack and rusting—yet further extend the potential uses of steel through increasing its durability and scope for imaginative design.

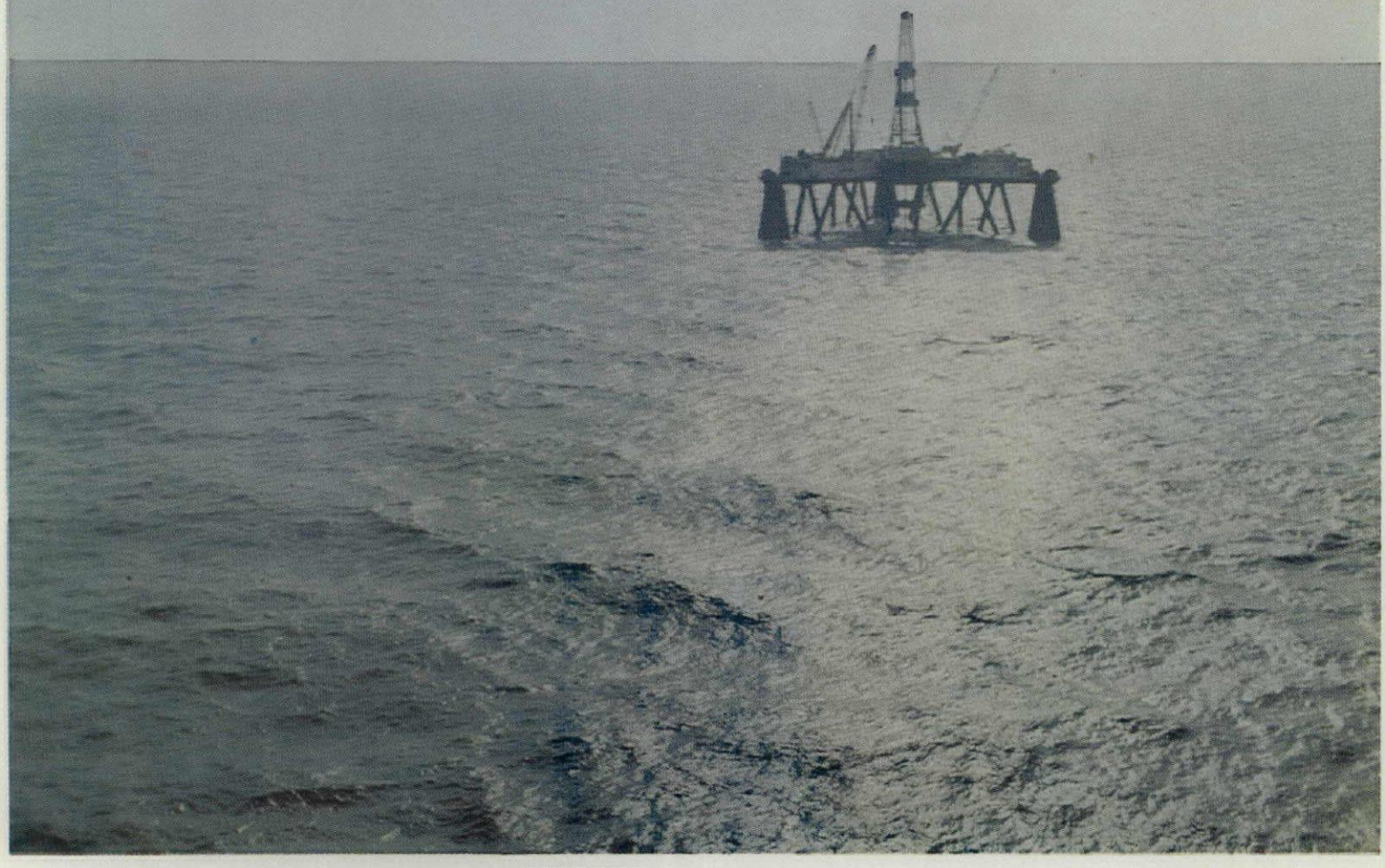
Prefabrication Primers for rust-free steel. *Molecular reactive coating is sprayed on to an ideal roughened, 'clean' steel surface immediately following the abrasive blast cleaning process. Metal coating in direct contact with steel acts as a sacrificial anode, and gives cathodic protection. Special anodic or stainless steel sealing coats applied later give long-term protection, under corrosive conditions.*





TO COMBAT CORROSION IN HOSTILE ENVIRONMENTS

The steel industry is meeting growing demand for 'clean steel'—blast-cleaned and ready-primed. For aggressive conditions, such as those met by marine structures, the shipyard practice of shot-blasting and immediate application of a suitable prefabrication primer to cleaned steel, is particularly desirable. Six basic types can at present be specified: Zinc rich epoxy; Extended zinc epoxy; Zinc silicate; Aluminium epoxy; Red iron oxide epoxy; Vinyl etch primers. The new BS Code CP 2008 outlines useful protective schemes for fully or partly immersed marine structures, including the vulnerable 'splash zone'. Cathodic Protection Systems also counteract electrolytic action of rusting by impressed current or sacrificial anodes.



Design in Steel

British Steel Corporation
22 KINGSWAY, LONDON WC2

REFERENCES **Cover** ☐ Stainless steel curtain-walling and mullion cladding, 'Britannic House', London, fabricated by Morris Singer & Haskins, Ltd., Basingstoke. Architects: Joseph and F. Milton Cashmore and Partners, London, E.C.4 **Inside** ☐ Automatic blast-cleaning and priming of steel by Sanders & Forster Ltd., London, E.15. Prefabrication primer by Metalife Limited, Harrogate ☐ Greenhouse by The Crittall Manufacturing Co. Ltd., Braintree ☐ 'Silver Shadow' body parts in galvanized steel sheet by Rolls-Royce ☐ Tyne Tunnel porcelain-enamelled steel lining panels by Escol Panels Ltd., London ☐ Stainless steel windows for London Borough of Enfield, by Drawn & Rolled Sections Ltd., Bridgend, Glam. ☐ 'Metalife Clad' steelwork for Joseph Sankey & Son Ltd., designed by W. S. Atkins & Ptnrs, Epsom, and fabricated by Modern Engineering, Bristol ☐ Dip-coating of steel products by Plastic Coatings Ltd., Guildford ☐ 'Colour Galbestos' cladding by H. H. Robertson (UK) Ltd., Wirral, Cheshire ☐ Stainless steel fasteners, Fredk. Mountford (Birmingham) Ltd. ☐ 'Selascrews', '-nuts' and '-caps' by The British Screw Co. Ltd., Leeds ☐ JCB excavator with Zintec electro-zinc coated steel sheet cab and engine cover, by J. C. Bamford Excavators Ltd., Uttoxeter, Staffs ☐ Steel-clad multi-storey car park construction supervised by Doncaster County Borough engineer and planning officer, P. Greaves, CEng., MIMun.E, AMI Struct. E, AMICE, AMIWE. Designed and erected by John Mowlem & Co. Ltd., Westgate House, Ealing Rd., Brentford, Middx. ☐ BP's North Sea Drilling Rig 'Sea Quest', built by Harland & Wolff Ltd., Belfast.

For Expert Advice on your corrosion problem
The British steel industry provides a valuable advisory service to industry on corrosion prevention and control, through the Corrosion Advice Bureau, Dept. X, British Iron and Steel Research Association, 140 Battersea Park Road, London SW11. Tel: 01-622 5511.

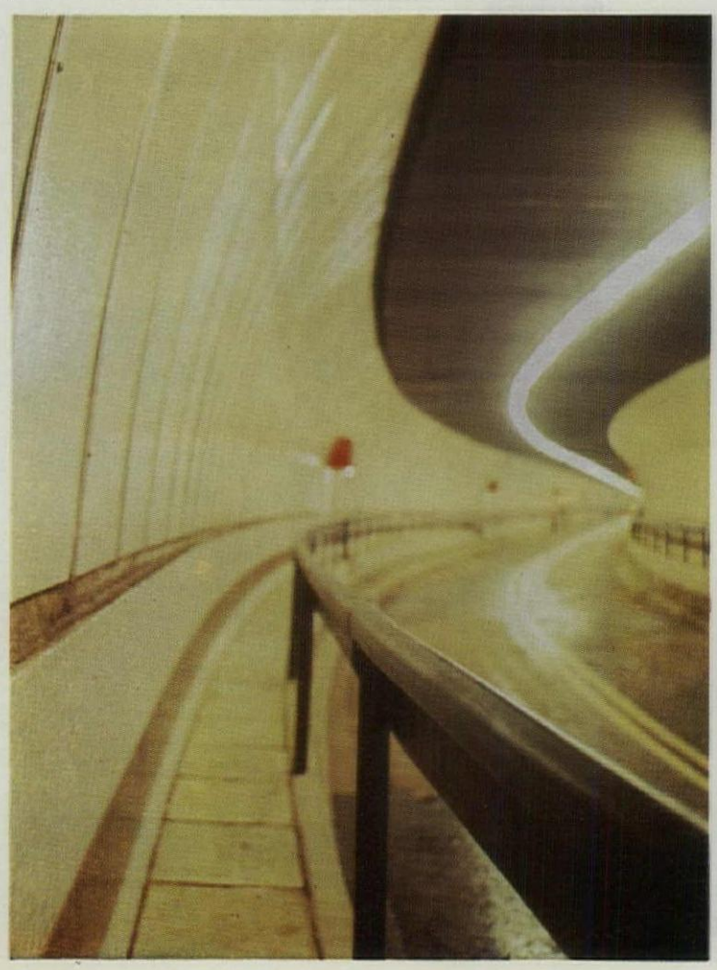
Valuable aid to correct practice
'Protection of Iron and Steel Structures from Corrosion', BS Code 2008—an important new publication now obtainable from the British Standards Institution, Newton House, 101-113 Pentonville Rd., London N1. 205 pages. Price 42/-.

Safeguarding appearance and strength. *Galvanizing provides highly efficient, consistent corrosion protection—and usually at the least unit cost. Steel window-frames and greenhouse components are typical fabricated steel products hot-dip galvanized for long maintenance-free service. Modern dipping plants with high throughputs can also handle large structural steel components.*

New vitreous enamelling techniques *and special steels mean more economic production of strong, light pressed steel products with tough colourfast hygienic glazed surfaces, resistant to severe corrosive attack. Porcelain-enamelled steel panels lining the new Tyne tunnel resist traffic fumes, are easily cleaned and held in pvc-coated steel channelling so that usual costly tunnel maintenance is eliminated.*

Stainless steel: good design policy. *Good design must aim to keep maintenance to a minimum. Stainless steel needs no special attention other than occasional cleaning, is ideal in high-rise architectural projects.* Cover—*Britannic House, London, headquarters of the BP Group of Companies. Stainless steel curtain walling and mullion cladding in highly corrosion-resistant 18/10/3 quality.* Above—*Stainless steel windows in multi-storey Council flats at Barbot St., Edmonton, will eliminate costly painting.*

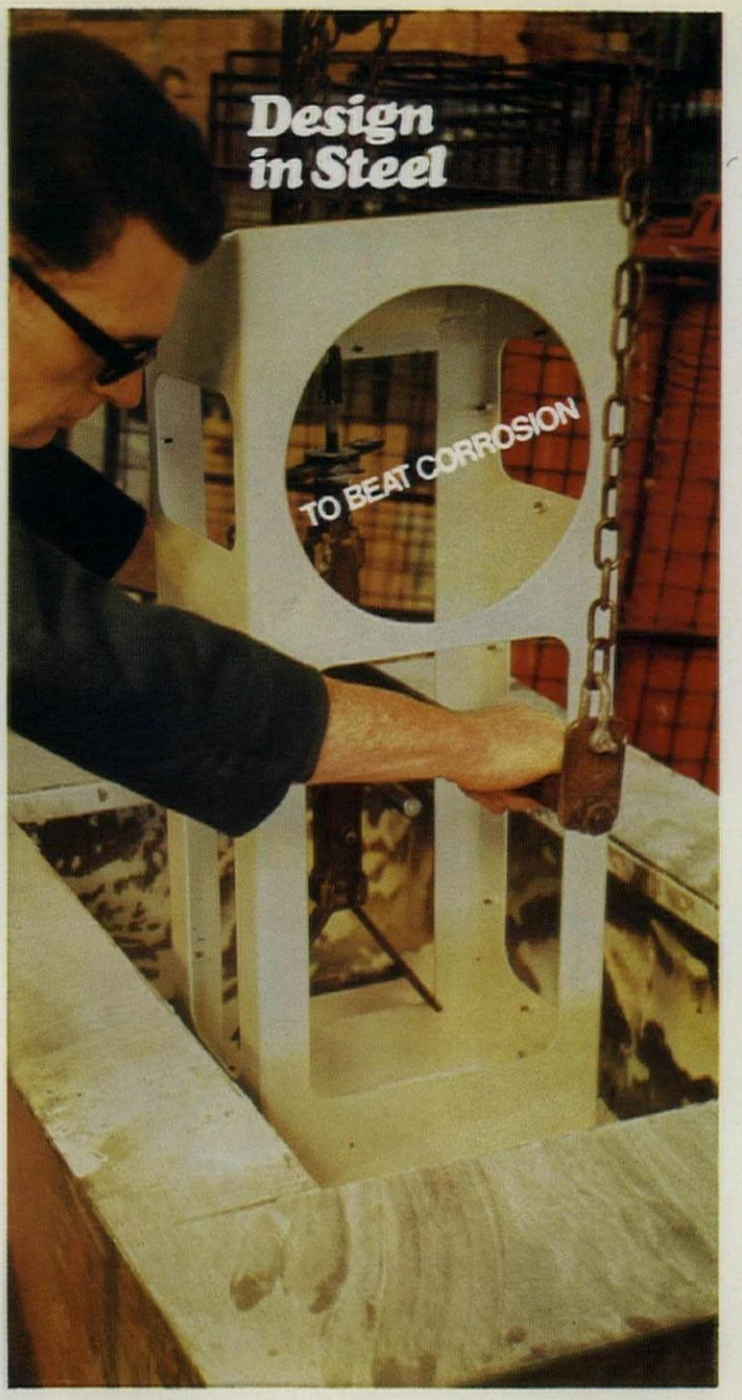
Galvanized for 'Rolls-Royce' performance. *To combat corrosion and maintain vital structural strength over this superbly-engineered car's considerable life, some 150 pressings of hot-dip galvanized steel sheet are used for underframe parts and reinforcements. The new 'Silver Shadow' is the first Rolls-Royce with body of unitary construction.*

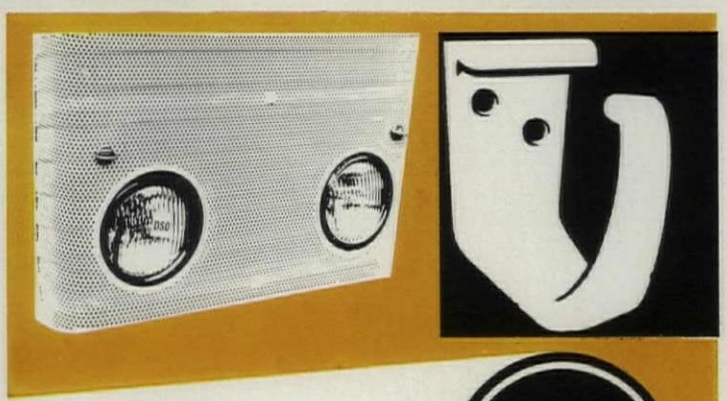


Steel Sheet—strong, light, versatile, corrosion-protected. *Hot-dip galvanized steel sheet is one of the cheapest and most versatile self-protected sheet materials available to industry. Easily formed and fabricated. Additionally coated with plastic or paint colour finishes it gives even greater resistance to corrosion, and cuts maintenance costs.*

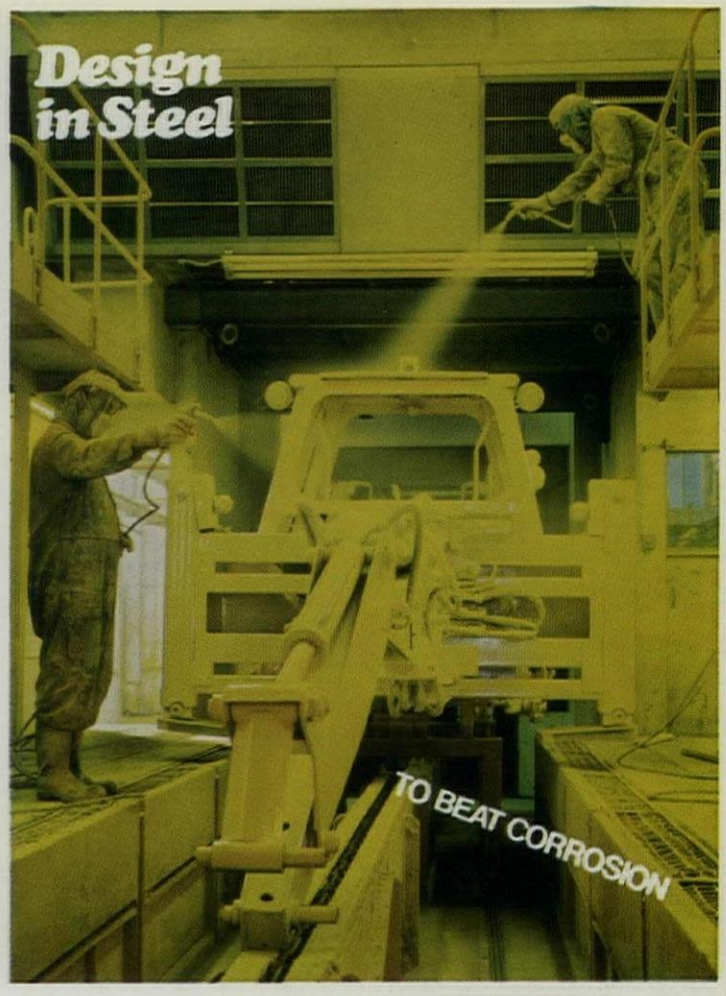
Corrosion-protected steelwork. *Standard steel-framed industrial buildings and special fabricated structures alike can now have the long-term corrosion-protection and maintenance-saving advantages which initial blast-cleaning and anodic metal priming of basic steel members provide. Welding and flame-cutting of the treated steel presents no difficulties.*

Design in Steel





Plastic-coated—for good. *The latest thermoplastic coating techniques permit engineers to use the strength of steel with the excellent decorative, wear and corrosion-resisting properties of special coatings. Steel traffic bollard above is nylon dip-coated for long maintenance-free service. P.V.C. dip-coated roof gutter bracket and tractor grille combine strength with long-term corrosion resistance. Steel tubes with continuously extruded HD polythene sheathing, are ideal as maintenance-free signposts.*

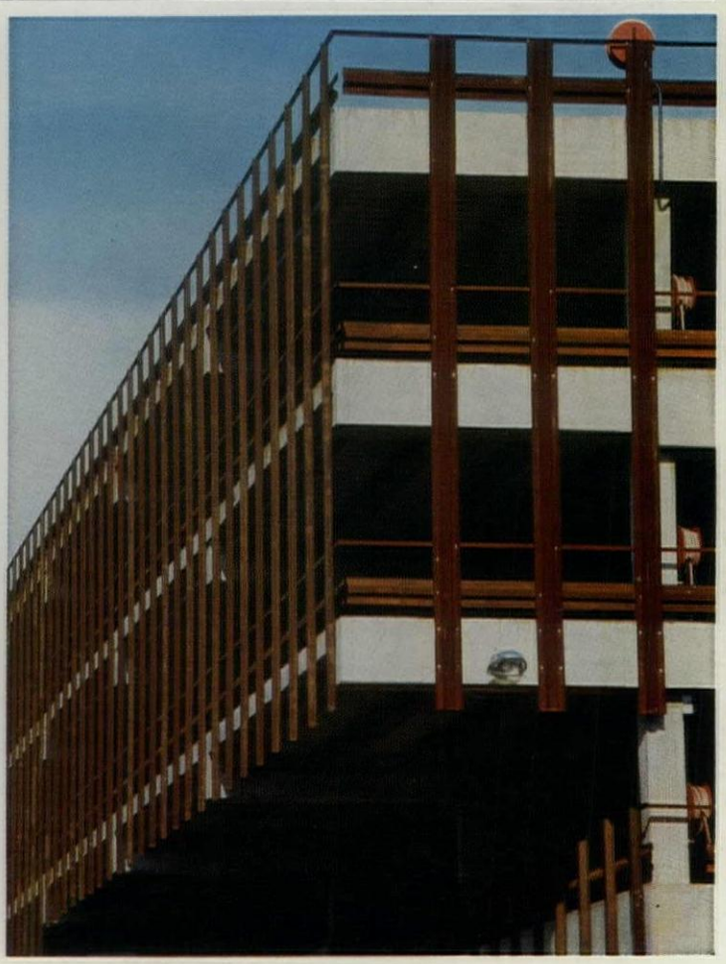


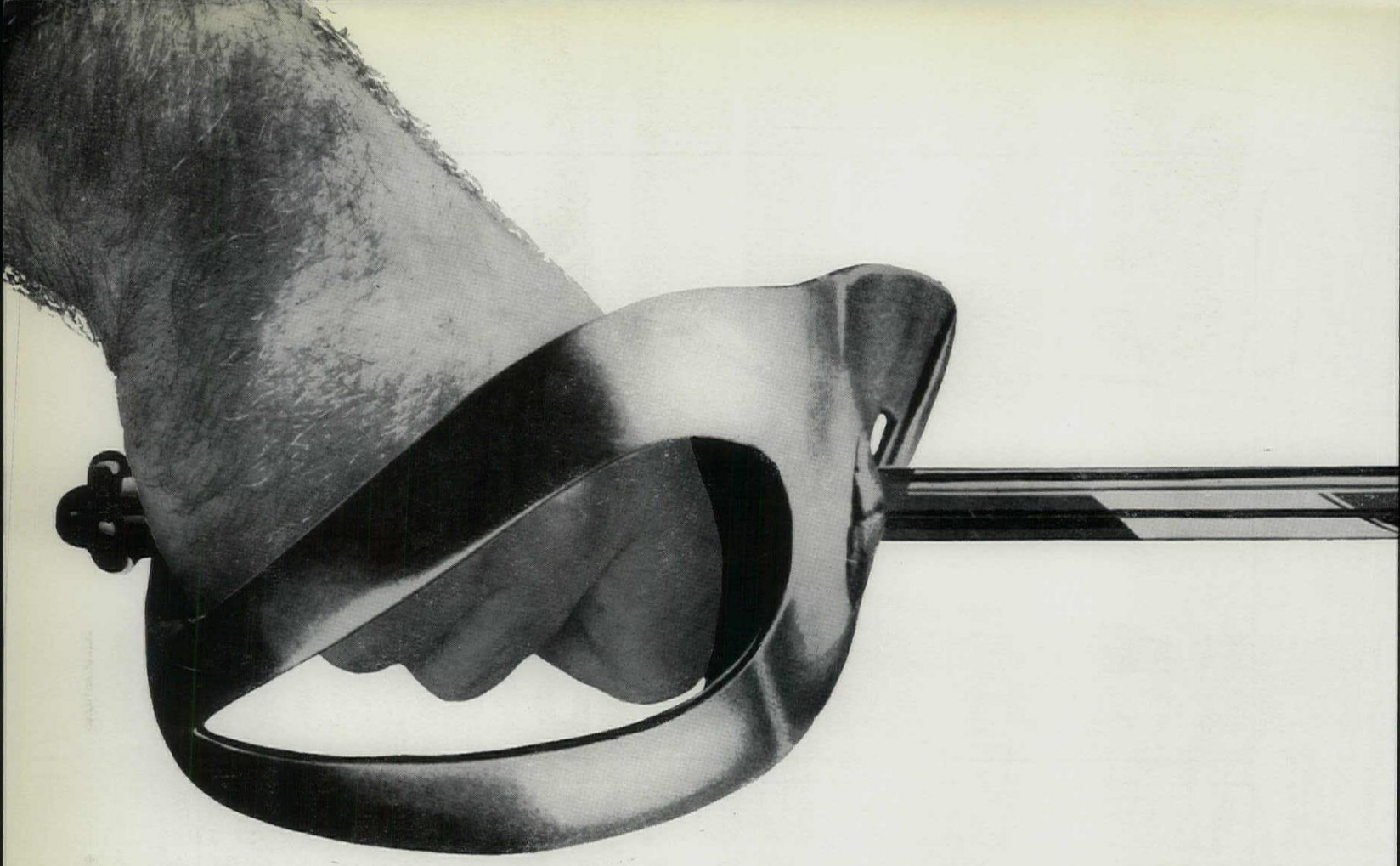
Long-life colour-cladding *'Colour Galbestos' is one of the versatile steel sheet architectural cladding products now giving attractive maintenance-free colour protection to modern buildings. Steel is degreased, pickled and passed through molten zinc. Pure asbestos felt is immediately pressed onto both sides, impregnated for additional strength and corrosion-resistance before colour-coating with modified polyester resin.*

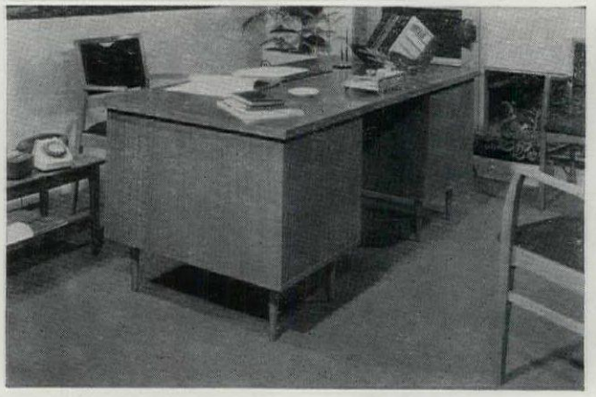
Corrosion-resistant fasteners *which ensure freedom from plant failure and unsightly rusting, are well worth a little extra in cost. Improved forging techniques have actually* reduced *cost of many types in Stainless Steel. Special fasteners employing insulating gaskets, washers or sleeves prevent bi-metal corrosion.*

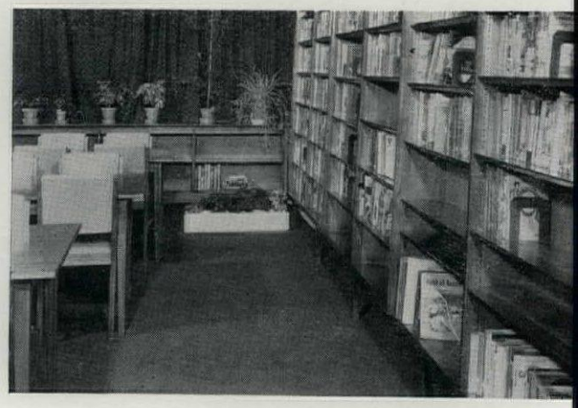
Better rust-protection. *'Zintec' electro-zinc coated mild steel sheet gives excellent paint adhesion for lasting finish, plus protection of hidden parts. Coating withstands severe forming, prevents creeping rust and eliminates the need for pickling, phosphating and chemical pre-finishing.*

Architectural 'bare' steel. *High strength low-alloy 'weathering' steels such as Cor-Ten offer high resistance to atmospheric corrosion. A distinctive decorative surface patina develops and darkens with time into a dense coat of purplish-brown colour. The tough oxide film forming on bare steel fenders and cladding sections of this multi-storey car park at Doncaster, eliminates all need for future maintenance.*









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THE COST OF CONSTRUCTION, MAINTENANCE, HEATING, FITTING, DAMAGE AND WEAR WITH IRON DUKE

Non-woven carpet surfaced with BRI NYLON to wear and wear and wear...

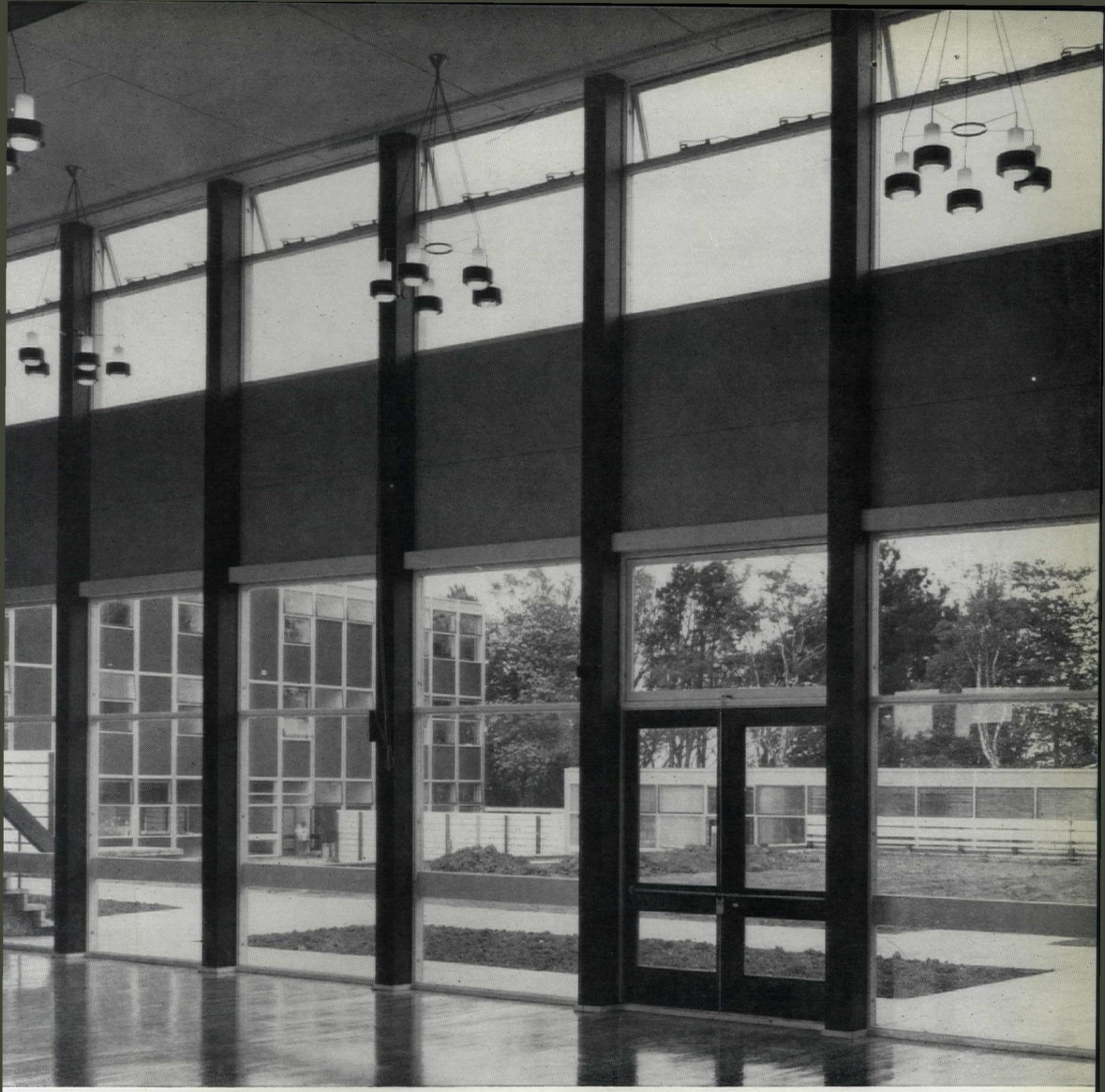
"Iron Duke" non-woven carpet presents to the world a front of 100% horizontally laid BRI-NYLON fibre. This surface is needled to a felt base, and is bonded with a special resin. The result is a combination of toughness and luxury not present in any other floorcovering.

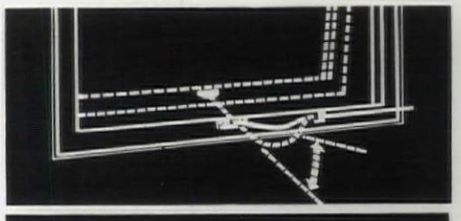
For all areas where hard durable flooring has hitherto been specified, yet where luxury, comfort, quiet and warmth are also desirable, "Iron Duke", this dignified and superbly practical carpet, is specially constructed, and is suitable for use anywhere indoors or out.

Offices, libraries, schools, universities, technical colleges, shops, halls, hotels, hostels and restaurants, are ideal contract situations for installing "Iron Duke".

For housing schemes and flats — "Iron Duke" is an excellent surface for use as a built-in flooring for most rooms.

- *About half the cost of conventional heavy duty carpeting.*
- *Can be laid on unfinished surfaces, cutting the cost of floor construction.*
- *Stain resistant, minimising costly maintenance and cleaning.*
- *Needs neither binding nor stitching, and underfelt is not essential.*
- *Far outwears top quality conventional carpeting.*
- *Eliminates floor impact noise at source and absorbs airborne noise.*
- *Thermal insulation properties relieve coldness at floor level.*
- *Available in 8 attractive colours and in 12' (366 cms.) widths or in free lay tile form 18" x 18" (457 mms.).*





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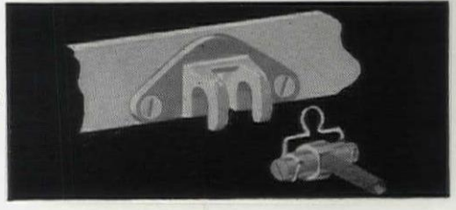


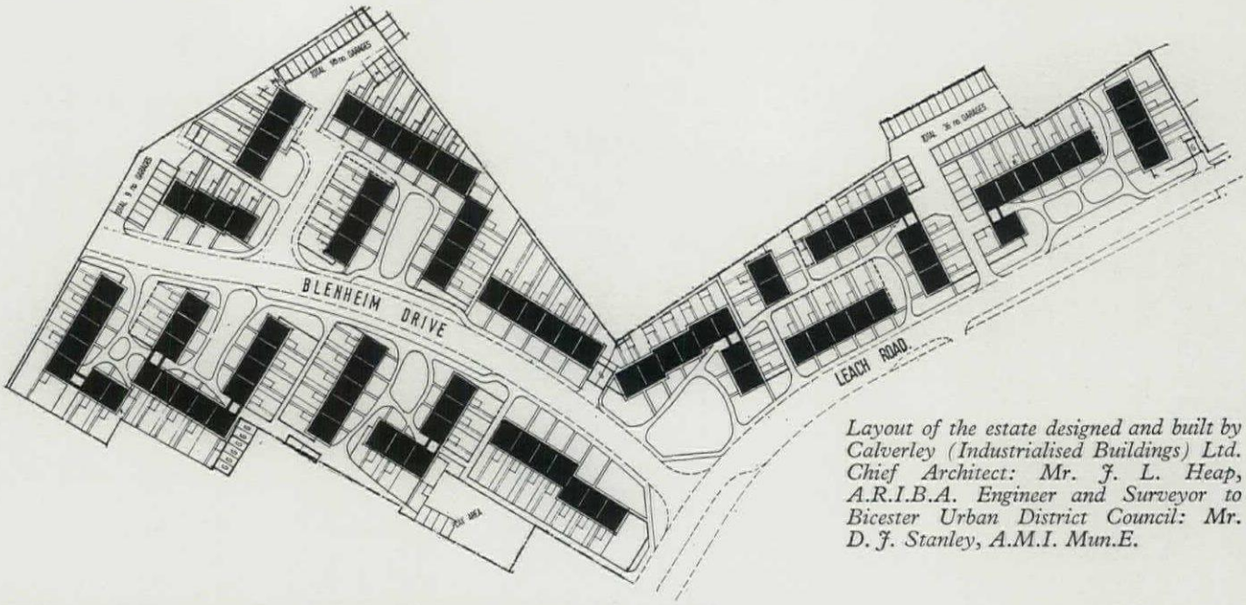
2

newflex window controls

Newflex cable window controls are fitted throughout the Northumberland Teachers College at Ponteland, Northumberland.
The assembly hall (illustrated) has six sets of gear each operating two lights. An efficient means of control is provided for the high opening lights without detracting from the building's appearance. Newflex is a new cable gear that will operate up to four lights from one gearbox.
The features illustrated left are (1) swivel thrust design to ensure a direct thrust on the window throughout the opening cycle. (2) Flip over device to allow the window to be quickly detached for cleaning purposes.

C. C. Brown, Northumberland County Architect.
The A75 system of Industrial Building by A. H. Anderson Ltd.
Main Contractors: Ralph Bowey & Son Ltd.

WILLIAM NEWMAN & SONS LTD., WELLHEAD LANE, BIRMINGHAM, 22B **NEWMANS**



Layout of the estate designed and built by Calverley (Industrialised Buildings) Ltd. Chief Architect: Mr. J. L. Heap, A.R.I.B.A. Engineer and Surveyor to Bicester Urban District Council: Mr. D. J. Stanley, A.M.I. Mun.E.

Timber-frame construction means better houses faster for RAF, Bicester

When the RAF required 100 houses at top speed to accommodate personnel and their families returning from overseas, timber-frame industrialised building techniques provided the answer, with better houses finished on schedule and built for comfort. Timber-frame construction was chosen to cope with this big housing problem for two main reasons: It allowed the houses to be finished faster, with drastic savings on on-site labour and handling time, and it ensured high-quality dwellings.

A system proved in practice

After the site was chosen by the Ministry of Defence in conjunction with Bicester U.D.C. many possible building methods were investigated, but traditional building would have been too slow to meet the urgent completion dates required and many industrialised building methods proved too inflexible in design. Then houses built by timber-frame industrialised building methods were studied, and this system was finally chosen as the one most likely to meet all the stringent requirements. It proved its value by beating the target date for the scheme by two months in addition to providing better, warmer, more attractive houses.

100 houses in seven months

Speed with quality were the vital requirements at Bicester. Timber-frame building provided them both. Work started on March 28th, 1967, and the first 34 houses were handed over three months later. These were erected on the prepared foundations and brought to structural completion by ten men in 19 days, and the entire scheme of 100 houses was completed in seven months—two months ahead of schedule.

Design is to full Parker Morris standards, and includes a downstairs cloakroom, full gas-fired warm air central heating and double glazing. All houses met the Ministry of Housing and Local Government cost yardsticks adapted to meet the requirements of the Ministry of Defence Land Agent.

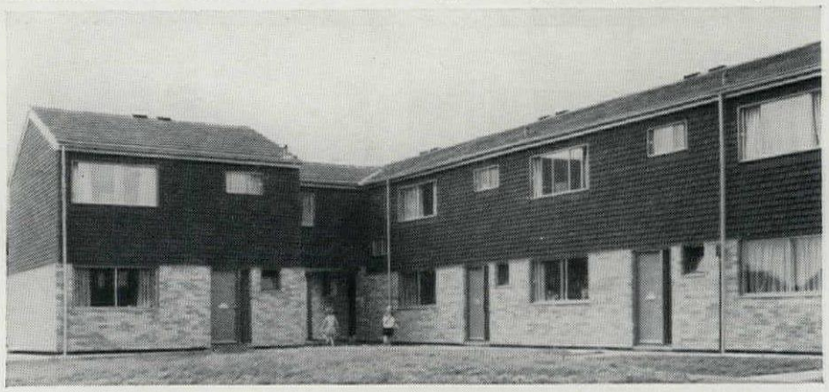
Ease of handling—speed of work

In timber-frame houses work starts from prepared foundations incorporating necessary services, with timber sole plates to receive ground-floor panels.

All the modular units can be handled by two men without special equipment, but several panels can be joined together and then lifted into position with a light crane. Once the roof is on, internal and external works can go ahead simultaneously, and by the third day central heating can be switched on to provide better working conditions. Rapid flooring is achieved by laying plywood sheets.

Greater flexibility in design

Because any type of external cladding can be used, timber-frame construction gives wide freedom to the designer, and permits the greatest variety of outside cladding to fit in with any surroundings. At Bicester, a brick skin is employed for the cladding of the ground floor walls, whilst for the upper storey, variety is provided by some



View of some of the completed houses in Leach Road, Bicester.

(Above) An early stage of construction at Bicester—framework, plywood skin and roof completed, ready for final cladding and interior finishing.

houses being clad in vertical cedar boarding and some tile hung.

Prefabricated joinery

All joinery is prefabricated, including staircases, built-in wardrobes and kitchen units. Exterior painting is limited to fascias and doors, since the windows are cedar-framed and all the 'rain-water goods' are in plastic. The high degree of prefabrication provided by timber-frame construction economises on all types of on-site labour and gives building speeds some two or three times faster than conventional methods.

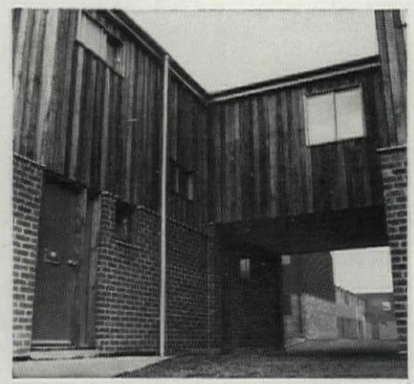
High standards of insulation

Timber-frame building naturally means a much warmer house. The insulating properties of wood, supplemented by additional materials, produce a house two or three times warmer than its brick-built equivalent. Fuel bills are reduced and central heating becomes really economic.

At Bicester, the studs are faced on the outside with exterior quality plywood. An asphalt-saturated breather paper is placed on these panels, and internally a 1-in thickness of glass wool is tightly fixed between the timber studs for insulation. The finished external wall has a U-value below 0.15, compared with that of 0.30 for a normal non-insulated 11-in brick cavity wall. This standard of insulation is enhanced by the double-glazed sliding windows, with a U-value of 0.53 as against 1.13 for single glazing.

Normally a heating unit of 23,000 B.t.u. is adequate for full central heating and hot water in a three bedroom house of timber-frame construction. In similar Calverley module houses already completed for another local authority, heating and cooking costs amount to no more than £10 per quarter.

(Below) One of the varieties of cladding employed at Bicester—brick and vertical rough-sawn cedar.



Faster methods for every size of builder

The successful experience at Bicester and in timber-frame housing projects throughout the country underlines once again the outstanding benefits of the method in speed and ease of work, and economy of labour. Because of the ease of working provided by wood, even industrialised building on an intensive scale needs little outlay in capital equipment compared with other methods and smaller builders too can take advantage of the method. At all stages fewer skilled craftsmen are needed, and wet trades are eliminated.

Greater freedom for the architect

The timber-frame method gives the architect a high degree of individual freedom in design at economic cost using standardised components. It provides not only the widest choice of exterior cladding methods, but, because the frame of the house is load bearing, permits wide variations in internal planning.

Warmer and better to live in

Moreover, timber-frame houses are liked by the people who live in them. They are warmer in winter, pleasantly cooler in summer and quieter to live in. Fuel bills are lower. Maintenance is easier. Built-in fitments and alterations are easy to carry out. And a soundly-built timber-frame house is as permanent as any other type, and holds its value similarly.

Find out how timber-frame building techniques can help you

The speed, economy and design possibilities provided by timber-frame housing will give even greater scope in the future. Find out how timber is meeting a wide variety of needs in industrialised building and other fields by sending for the publications below.

1

2

3

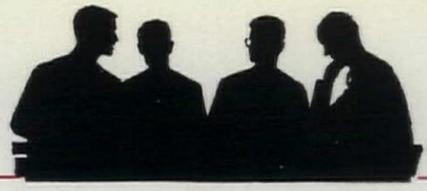
1. *Two timber-frame houses at Chichester—part of an estate of 103 built for sale by the local authority (Quikbild).*

2. *A split-level timber-frame house at Wilmslow, Cheshire, built by a local firm as part of a private development. (Engineered Homes).*

3. *Timber-frame terraced houses built for Norwich City Council. (Medway).*

comfortaire

4 POINT PLAN FOR ELECTRICAIRE CENTRAL HEATING



3 PROGRAMMED SUPPLY

We manufacture Comfortaire Electric Ducted Warm Air heaters with the backing and technical resources of one of Britain's most advanced engineering groups. Illustrated opposite are the Creda works at Blythe Bridge and part of the Comfortaire assembly line. Full responsibility is accepted, subject to agreed contract, for the delivery of the correct units at the required time. Where call-off is spread over a long period of the contract the handling of all such detailed arrangements can confidently be left to us. All products are of course fully guaranteed. Once work on the site commences you need have no fears of hold-ups through delays in the supply of any part of the heating equipment.

In conjunction with Electricity Boards and our Authorised Installers, Comfortaire is supplied under a comprehensive 4-Point Plan, of which PROGRAMMED SUPPLY is the third stage. The others are:

1 **Design & Planning.** Consultation at the earliest time on the heating system for a new contract and the design of the complete heating system.

2 **Fast Accurate Costing.** The provision of a computerised detailed costing for the complete heating installation, including costs of heating units, ducting, etc. labour costs and estimated running costs.

4 **Installation.** Acting as Main Contractors, through Electricity Boards or our network of Authorised Installers, to ensure on-schedule site installation of the heating system.

These four points comprise the comprehensive Comfortaire Package Deal—any stage is available separately if required.

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A batch of Comfortaire heater units being loaded at Blythe Bridge—ready for on-schedule delivery direct to the site.

Comfortaire is Electric Warm Air by Creda—already established as the Brand Leader in Electricaire Central Heating. It uses "half-price" electricity stored during the off-peak supply periods. It compares very favourably in running costs with other warm air installations. Comfortaire Electric Warm Air has the advantage over other fuels of needing no flues and having simply a cable as power input. This gives a much wider choice of location for the heater unit.
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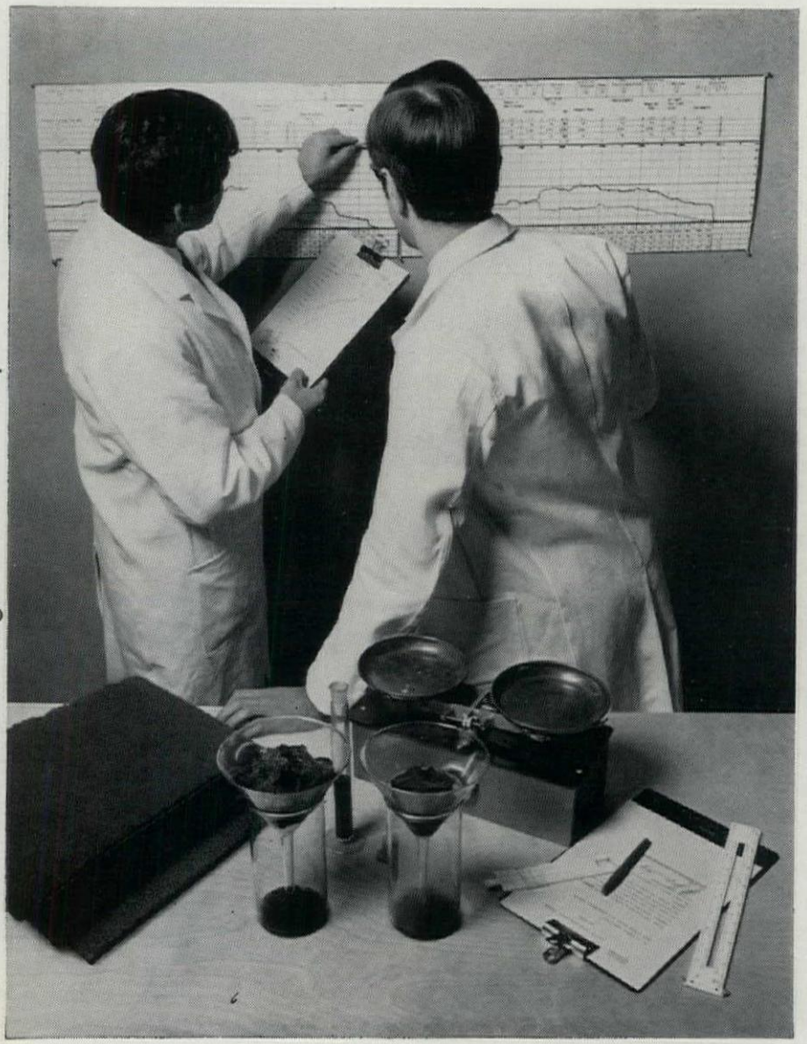

These men study carpets like some men study fauna and flora.

They're acquainted with every known species of carpet; their behaviour under stress; the wide variety of specimens available; how they flourish best in certain colours in the big cities, and in other colours in the more remote provincial regions.

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tretford make it

the tretford carpet tile

Now — a real carpet tile. Tretford carpet is now available with a cork backing in half metre square tiles. They require no special maintenance, can be laid easily and interchanged at will. Available in all 20 Tretford colours.

New construction

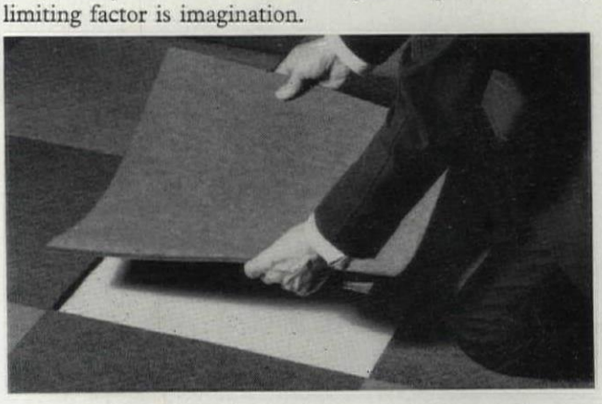
The surface of Tretford carpet tile is 100% animal hair and wool. The backing is cork composition. The tile is approximately half an inch thick. The bonding is perfect. The surface and backing cannot separate.

Easy to lay

The tiles require no sticking or fixing. They are simply laid in position. They lie flat on any reasonably flat surface and can be laid, like Tretford, on to concrete screed or any other hard surface without underlay. Tretford tiles will not skid on polished surfaces. The cork back grips. No maintenance is required other than ordinary cleaning.

Completely interchangeable

All Tretford tiles are half a metre square. They can be laid with the cord in any direction. The 20 superb colours permit endless permutations of effect and the pattern achieved can be changed at will. The tiles can be replaced or changed about to offset uneven wear as in corridors or areas of heavy traffic. The decorative effect can be used functionally to direct traffic or organise space. The only limiting factor is imagination.



Superb performance

Tretford is known for its wonderful wearing properties. Independent tests have shown that it wears every bit as long as conventional pile carpets costing twice the price. These properties, together with rot-resistance, moth proofing and colour fastness are further enhanced by the cork composition backing. Tretford tiles have high thermal conductivity and are therefore ideal for underfloor heating. The special backing also provides excellent sound insulation. Being of natural fibres Tretford carpet tiles are, of course, easy to clean and resistant to stains and dirt.

Available in any quantity—

from one tile upwards in any colour, to provide the utmost flexibility in design application.

20 co-ordinated colours

Tretford tiles are available in the same subtle colour range as Tretford itself - colours which are chosen and co-ordinated to give maximum scope for imaginative colour planning.

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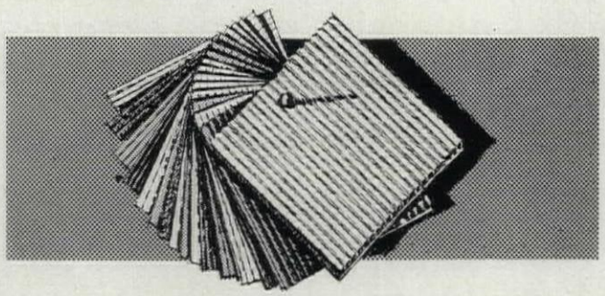

of the new Tretford carpet tile. If you have a Tretford swatch you will know the colour potential. If you have not, we'll gladly send one. Tretford carpet tiles are available now through most contract furnishers.

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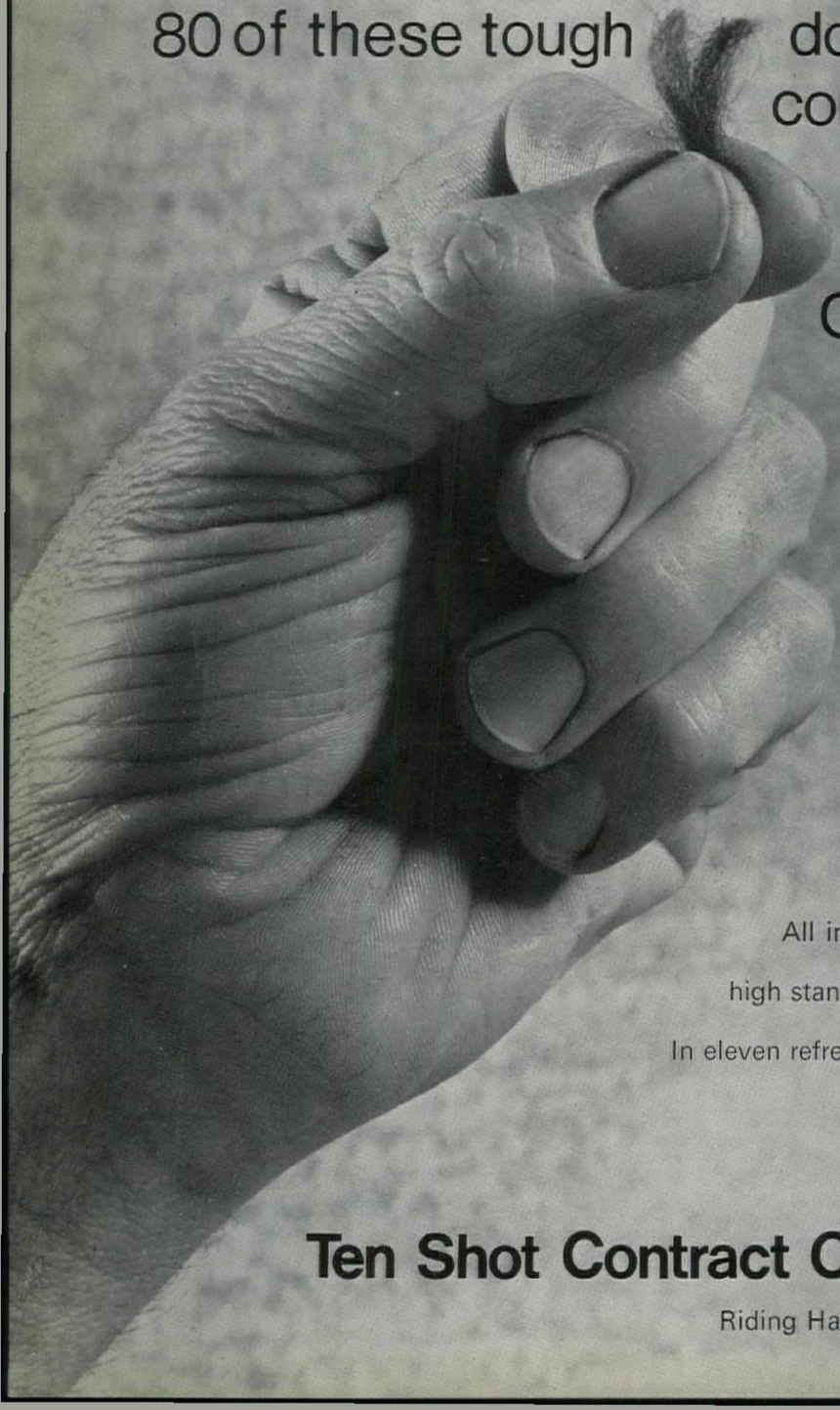
TOUGH



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Riding Hall's Ten Shot Contract Carpet was specifically developed for the contract market. That's why Ten Shot has eighty double tufts crowded cheek by jowl into every square inch. Ten Shot is welded onto its own bounceback foam rubber underlay. All in all, this adds up to a life of more than eight times the minimum standard for contract carpet. Ten Shot's new high standards reinforce the advantages of easy maintenance, high level heat and sound insulation, and immunity to moths. In eleven refreshing colourways and 12 feet wide, Ten Shot is just right for that prestige job you're working on.

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Cellobond polyester resin and glass fibre were selected for their excellent strength to weight ratio, low tooling costs, reduced handling costs, weather-proof and self-washing characteristics and their highly decorative forms and surfaces.

Architect N. Cooley FRIBA

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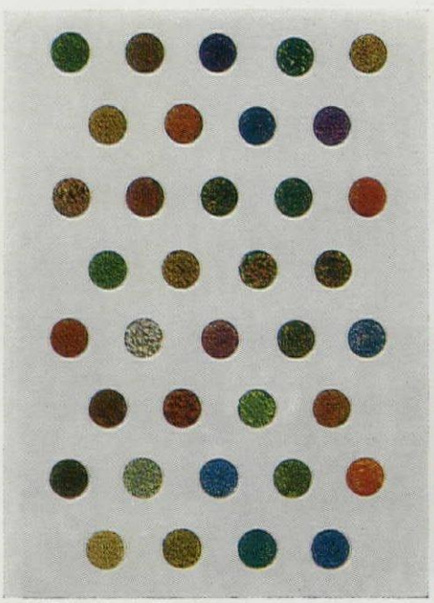
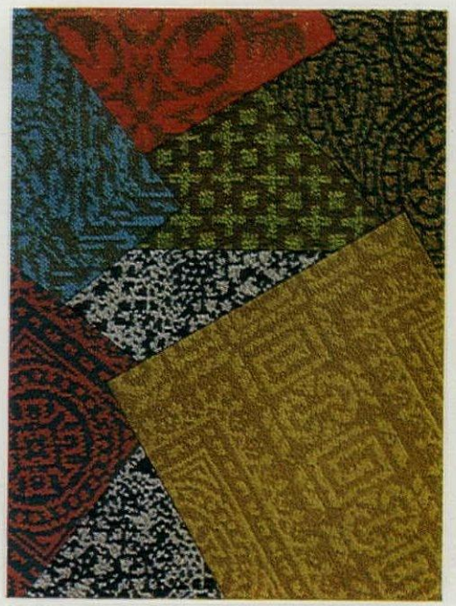
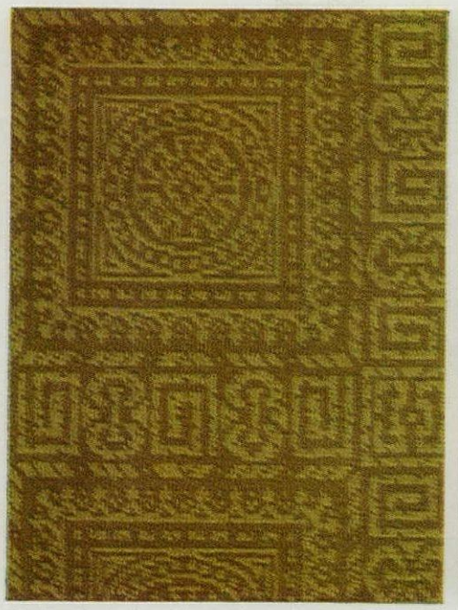


1 Choose any two colours from the Colourdisk range of 36 (that's 1,260 basic choices to start with !)



2 Select one of the 12 Chameleon designs



3 Templeton's will weave a carpet in the colours and designs *you* have chosen

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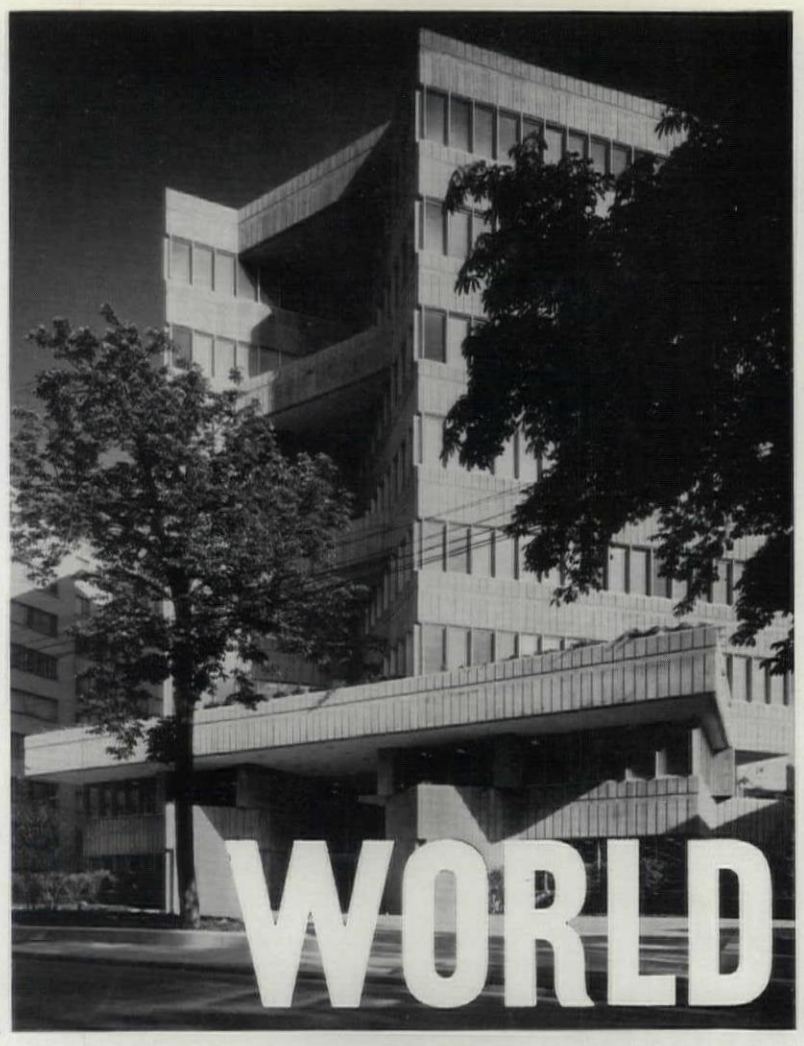
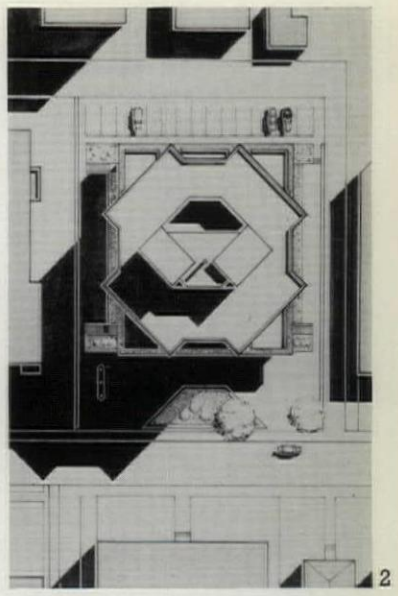


1

IN THE GROOVE

Speculative office blocks do not as a rule produce interesting architecture. An exception is Fairfield and Dubois' building in a nondescript suburban street of Toronto, 1, which a good client and the architects' own searching approach to every design problem have made possible. After preliminary studies of land use, the client was persuaded to buy more land to make the site viable. The plan, 2, consists of a two-storey lower building politely aligned with the street and a six-storey tower turned 45 degres to let light and sun penetrate. It was important to be able to let the floor-space in small subdivisions, and this requirement is expressed in the broken-up form of the tower. The balconies, which bridge the internal angles on every other floor, prevent the layered effect typical of so many office buildings.

Similar scaling devices, making use of double-storey heights, have been used by the same architects in the British Mortgage and Trust building and in their first project for an office block and warehouse of 1962, 3. Characteristic, too, is their concern with surface pattern—the vertical grooves of the *in situ* concrete in the vertical office block, 4, or the emphatic horizontal lines of their long low buildings such as the offices for Oxford University Press and Dow Corning Silicones (AR World, May 1967). A recently completed job of this kind is the Ceterg office building in a suburb of Ontario, 5. The material, now standard but originally designed by the architects, is a concrete block with a recessed joint. The rectangular plan, 6, with entrances at each end, is divided along its length into a row of offices facing south and a drawing office facing north. Wright's influence is clearly evident in the concrete blocks and deep timber roof (exposed as a truss in the drawing office), and in the overwhelming horizontality of the building. The section, 7, shows how the ground is built up to cill level on the south side, providing the offices



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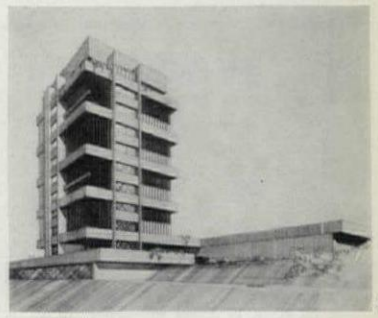

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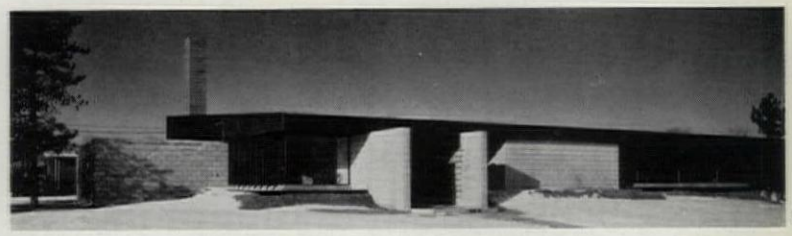

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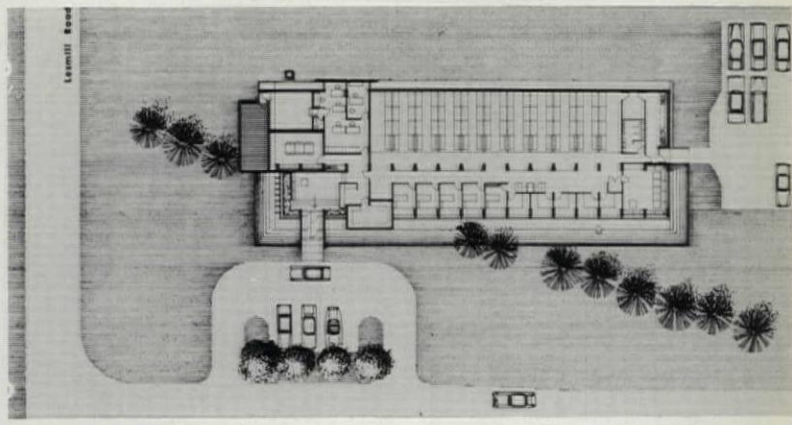

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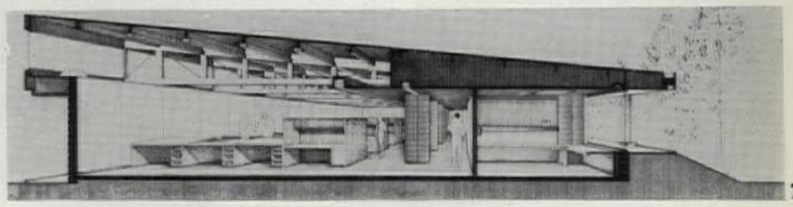

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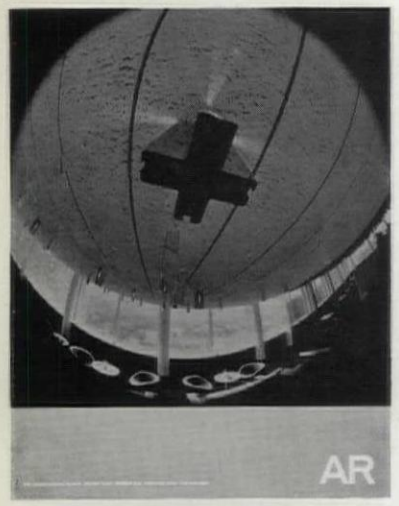

This month's cover *is a fish-eye view of the Looking Glass restaurant designed by Leonard Manasseh on the eighteenth floor of the Royal Lancaster Hotel, London. The restaurant is one of the public areas of the Royal Lancaster, featured on pages 119-125 of this issue, in the newly expanded Interior Design section. Photograph by de Burgh Galwey.*

THE ARCHITECTURAL REVIEW

9-13 QUEEN ANNE'S GATE, WESTMINSTER, SW1 WHITEHALL 0611 FIVE SHILLINGS

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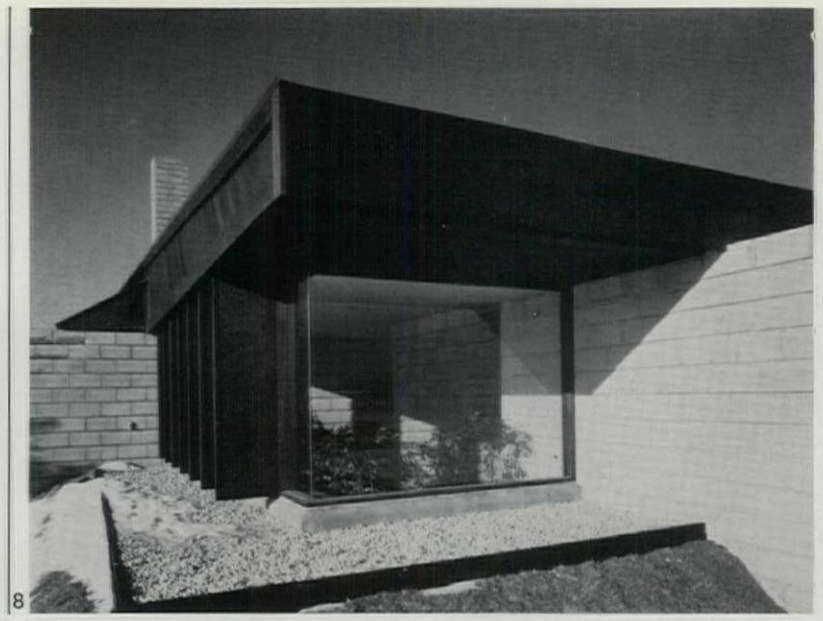
IN THE GROOVE

with a greater feeling of privacy from the road, and also making the low side of the building look even lower. The crisp detailing and satisfying scale of the exterior, 8, is unfortunately not carried through to the inside where the use of the same concrete block seems inappropriate to the scale of the interior spaces, 9.

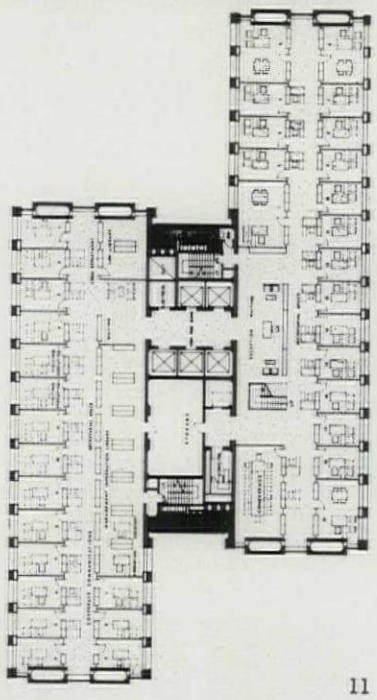
9



8

PACIFIC SKY-SCRAPER

Unfortunately sheer size always makes news, and Erickson and Massey's new office building for MacMillan Bloedel, 10, is going to be the largest in Vancouver. Happily the building promises to have other qualities as well. The solid look of its twin slabs reaffirms a current anti-Corbusian trend demanding that buildings sit solidly on the ground firmly related to their base, which in this case is a sunken landscaped piazza and a parking garage with a landscaped roof behind. The Monadnock-like batter on the lower floors recalls masonry construction rather than the sand-blasted concrete of which the building is in fact made. The plan, 11, reminiscent of Hentrich and Petschnigg's Düsseldorf skyscraper, has a central service core leaving the two staggered slabs free for office space. The fact that they are staggered provides more offices with reasonable aspect—an important consideration if the client wants individual offices rather than open-plan office space—and breaks up a single and often lumpish mass into two distinct forms. The narrow end elevations provide an opportunity for drama, which is fully realized here and is more than necessary as a foil to the unemphatic hole-in-the-wall treatment of the main elevations. Remembering what happened to the Pirelli building, it remains to be seen whether this aspect of the model can be translated into reality.



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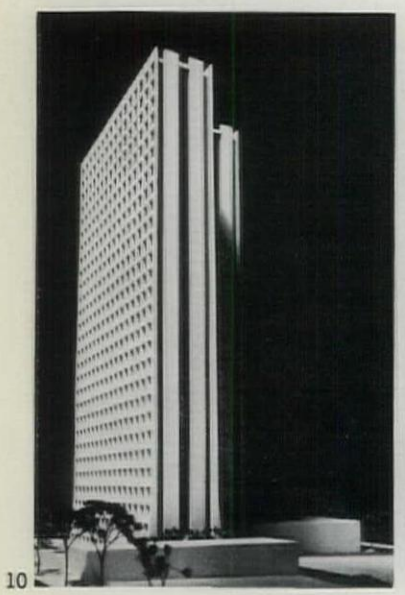
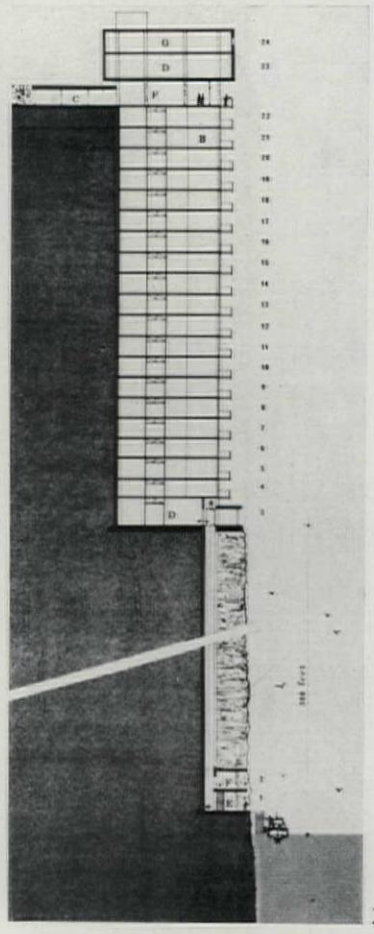


10

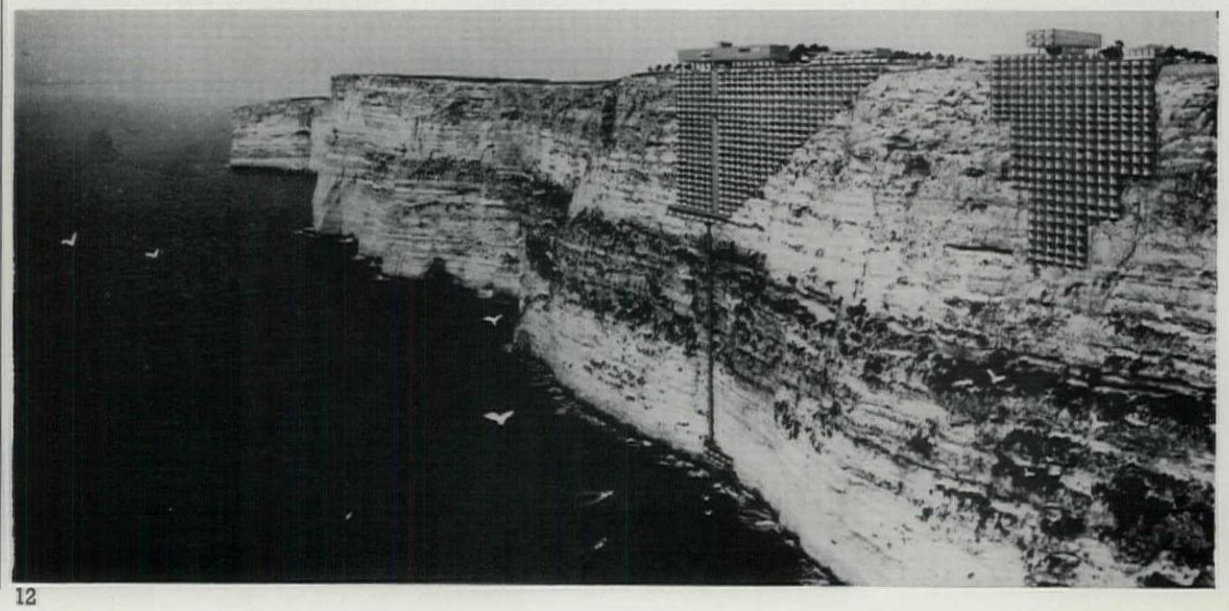
MALTESE ROCK-SCRAPER

There is no lack of precedence for burrowing into rock, as architectural glories like Abu Simbel, the Ajanta Caves or the rock churches of Cappadocia bear out. In his second Roq and Rob study, Le Corbusier had suggested underground passages and lifts to serve a kind of motel spread over a steep and rocky site at Cap Martin. Now Lafuente, with the engineer Rebecchini, has produced a more radical solution for an hotel at Gozo in Malta, 12. Everything is, of course, reversed. It is the top floors at ground level, 13, which contain the reception rooms and swimming pool, while the bedrooms, each with a balcony facing out to sea, are cut into the rock below. On the lowest floor, which



13

is still some 200 ft. above sea level, there is a bar and a night-club, and from here the lift connection with the landing stage at the bottom is nicely expressed by the deep cleft in the rock. The architect's claim that he has integrated the large bulk of an hotel with the landscape and coastal silhouette is true but misleading, since no large building should ever be allowed above ground on such a site. Technically it is an ingenious solution and the suggestion of a dream holiday between sky and sea could be enticing. But the question remains whether one would ever want to spend one's holiday perched on the edge of a cliff, obliged to travel vertically nearly 400 ft. to swim at the foot over a towering rock face without any beach.



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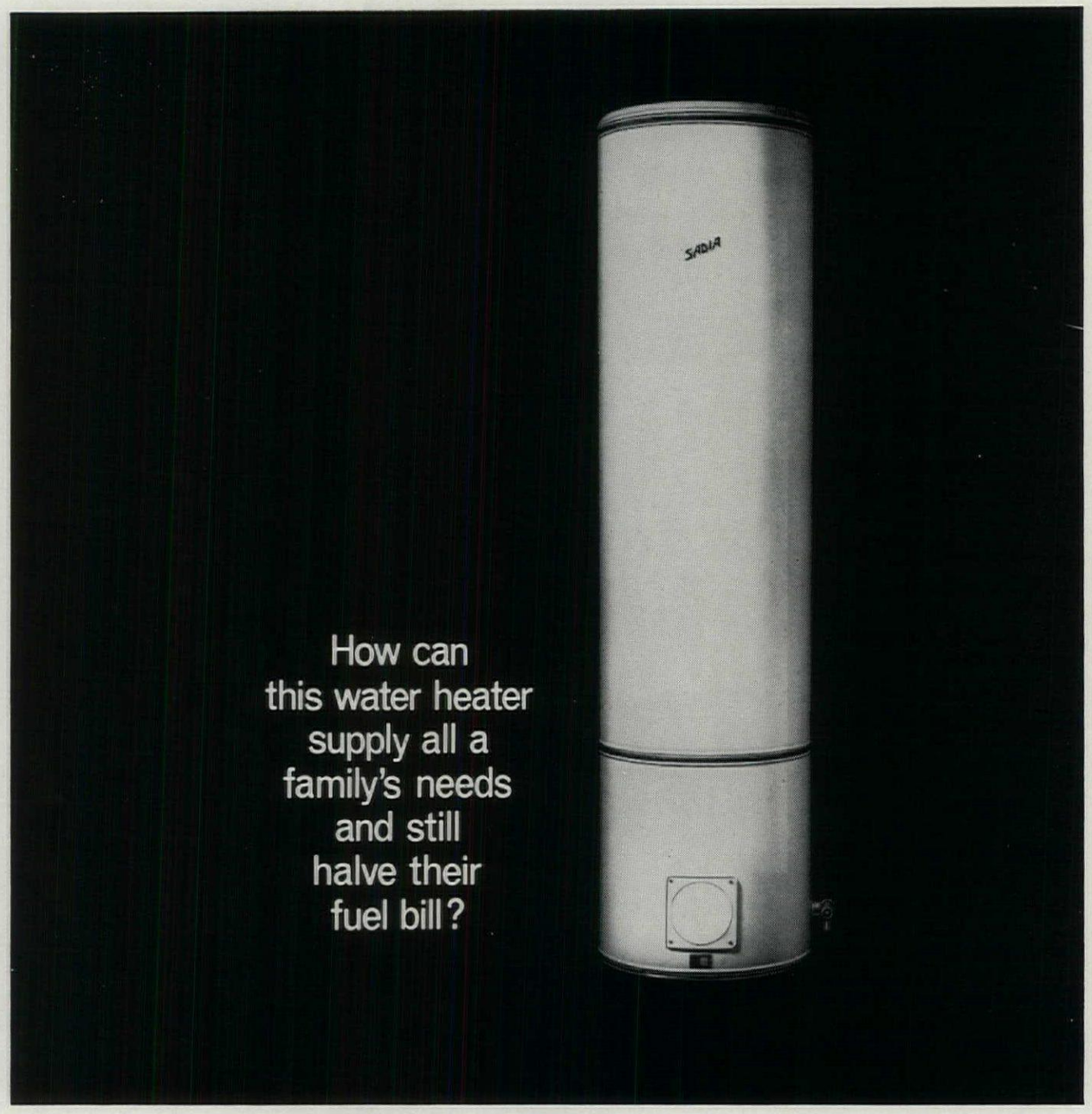

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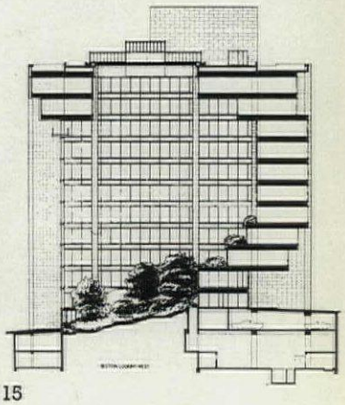
14

FUND FAIR

In Manhattan, half a block west of United Nations headquarters, Kevin Roche's Ford Foundation building, 14, has now been completed in Cor-Ten steel and not in concrete as originally intended (AR World, January 1966). The change, due partly to the great span of some beams and to the difficulty of cladding these, has given more emphasis to the stone-faced piers. It is another instance of this firm's preoccupation with the simplified structural statement leading to a kind of giantism in architecture. (See project for the Knights of Columbus Building, also in World, January 1966). The contrast in scale with adjoining buildings can best be seen on the right-hand edge of 14 where an existing building with an external fire-escape abuts the new one.

The offices contained on two-and-a-half sides of an enclosed and landscaped court, 15, are intended to house some three hundred and fifty people from the academic world with the responsibility of allocating Ford funds. They will have a view across the cascade of trees inside the court (not yet completed), through glass walls to the street and the New York skyline



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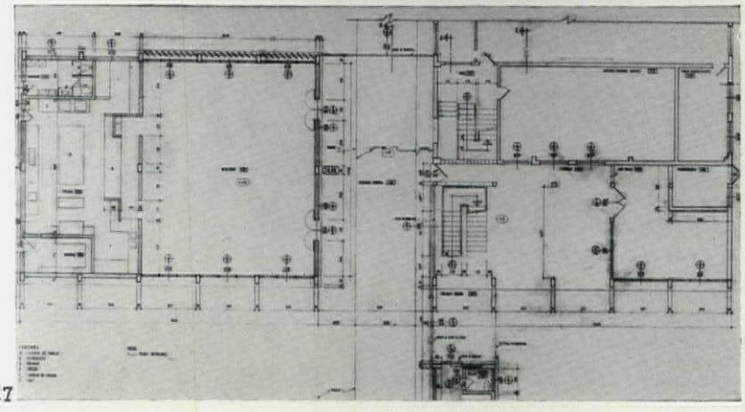
beyond. Roche's idea was to establish 'a sense of the individual identifying with the aims and intentions of the group,' the court acting as a transitional space between street and office and providing at the same time a communal area which is more than a mere service core.

BOGUE IN RIO

In cosmopolitan Rio, a graduate of McGill University and former assistant to both Spence and Niemeyer, Brian Bogue, has recently built an important extension to the De La Rue factory which was chosen by the Brazilian Institute of Architects for an award. The factory has been given a two-storey rectangular block, 16, not in the conventional manner of a smart facade of offices concealing inadequate production sheds, but in an egalitarian spirit providing facilities for both office and factory workers. From the porter's lodge, which acts as the main control point for all persons and goods, a road passes through the new building, cutting the plan in half, 17. On the left there is the refectory and kitchen, and on the right social and recreational areas. On the first floor offices extend over the long facade. Sun control has largely dictated the

16



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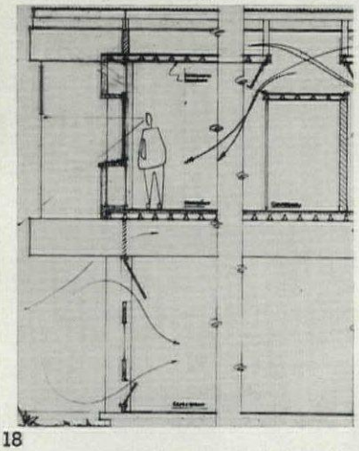

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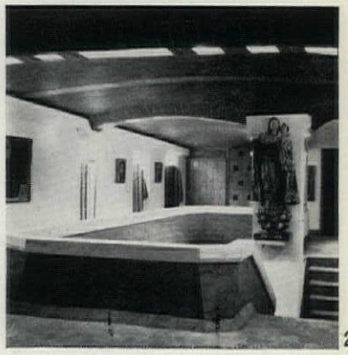
form and texture of the elevations. The cantilevered structure of *in situ* concrete supports a projecting roof and provides, on the front at least, fixings for asbestos panel sun screens, 18. The expression of structure works less well in the single-storey porter's lodge, where the size and weight of the beam becomes overpowering, and on the corner, 19, where any amount of ingenuity fails to disguise the complications.

19

INZA

Three interiors in Madrid by De Inza—underground environments with different skin, he calls them—do little to reassure one about a common language of design. At least the first two are highly personal. The exhibition place for religious art, 20, has a



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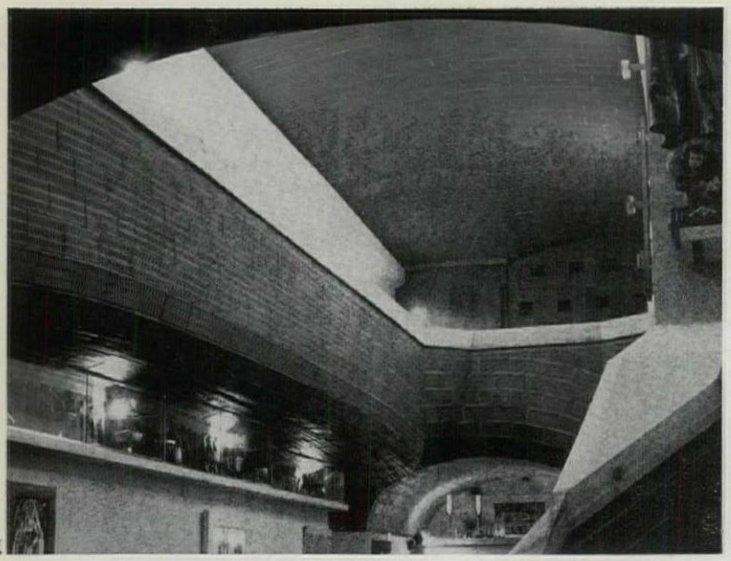
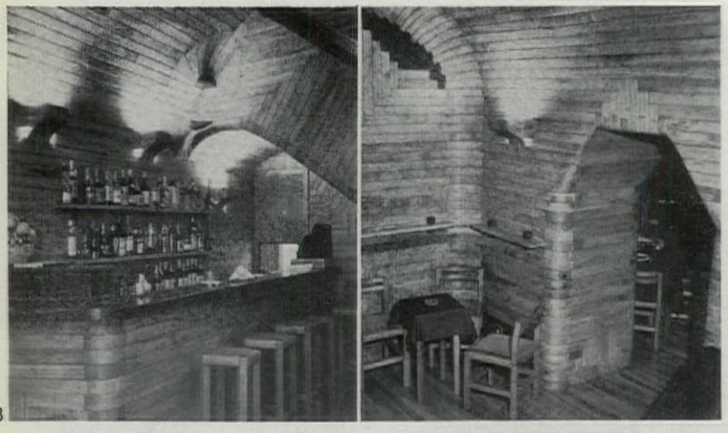


21

INZA INTERIORS

ceiling of Catalan vaults built of hollow-clay tiles left exposed, and a floor of hexagonal clay tiles. Such economy in finishes (the walls are white) might have provided a suitable background for an exhibition but for the complicated and over-dominant forms. The bulbous underside of the gallery, for example, with its crude surface, hardly makes a suitable neighbour for a plate-glass showcase, 21. In the Restaurant Gizon, 22, economy of materials is taken to its extreme with the sole use of oak boarding even to the point where the light fittings on the walls become part of the same envelope—the skin erupting, as it were. The elaborate forms seem to come off much better in the more sophisticated and smaller scale material. The architect indulges in decorative pattern, as in the floor boards turned up the wall and repeated in inverted form as a keystone, 23. His virtuoso solutions where two or three planes meet are those of a sculptor, unpredictable and unique. By comparison, the Restaurant Libanio with its dark velvet wall linings and exposed air-conditioning ducts, seems banal, 24. To be asked to regard the ducts as 'another enormous crustacean' (the restaurant serves shell-fish) is hardly reassuring. A restaurant is surely the last place where the guts of a building should be exposed.

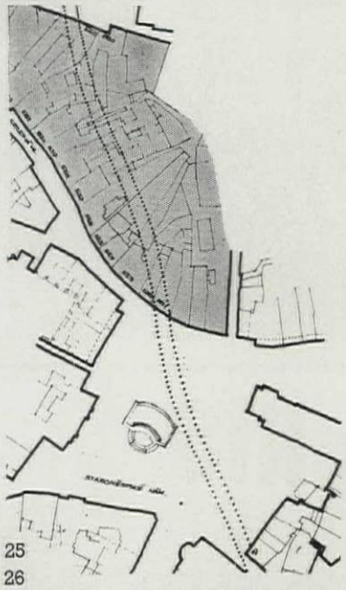


22, 23

24

PRESERVING PRAGUE

In Prague an underground railway is being planned, part of which will be taken diagonally across Old Town Square and under an old and dilapidated residential area to the south-east (shaded on 25), a pedestrian precinct of delightful intimacy, variety and contrast, 26. M. Pavlik, who with V. Vohlidal has already been concerned with both restoration and reconstruction in this area (see AR World, July 1966) for a similar scheme, and December 1965 for the Town Hall competition), is once again behind this sensitive rehabilitation, this time with F. Kasicka. The sketches suggest a straight restoration of the exterior with



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few alterations or additions, most notable perhaps for a Londoner being the retention of the old street lamps, 27 and 28. Comparing 29 and 30, it is nice to see the primitive buttress, which must once have saved the tower-like building from collapse, restored without apology together with the archway into which it cuts so crudely. Although the garage door on the other side obviously had to go, one is by no means convinced by the wrought-iron gates which have taken its place. The recent destruction in Broadwick Street and the irrevocable fate of Soho as a whole is a sad reminder of how much better some countries look after their amenities.

27

28

29

30

VIEWS AND REVIEWS

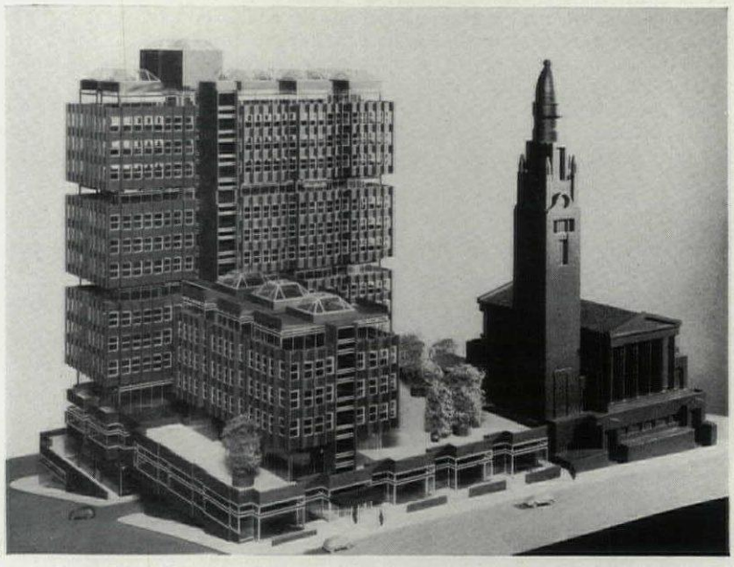
marginalia

NEIGHBOUR TO THOMSON

The future of 'Greek' Thomson's St. Vincent Street Church having been assured by Glasgow Corporation's purchase, the structure is now being renovated. The next problem is that of the site next door—that is along Bothwell Street, previously occupied by buildings that have detracted from the glory of base, portico and tower which Thomson had so daringly conpodium whose upper lines will repeat those of Thomson's base, thus nullifying the visual dangers which always are inherent in building on a sloping site.

The scale of modern architecture being what it is, the older structure frequently suffers when the old and the new are set in conjunction. In this instance the 1.25 acre site will allow much office accommodation to be concentrated in the main block of thirteen storeys pushed out to the south-east perimeter. This, together with the acceptance of the fall in ground level from north to south, permits the provision of public open spaces. A large space lies between the low office block and Thomson's Graeco-Egyptian tower, with a slip passage leading to a southern terrace on a level with the portico. There is also to be pedestrian access from the north through the showrooms, on to the terraces and so to street level.

Previously the spectator was only in contact with the church on the north and west sides; this scheme creates some new vistas. From the south-east the office block will, it is true, cut out the views of the church, which from this angle, however, were never the most satisfying since the tower



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joined. The site is being redeveloped, and some concern has been expressed as to the effect of the redevelopment on the church—see for example a letter in the August AR, page 83. The picture, 1, now shows the proposed form of the development which is being jointly undertaken by the Corporation and a private developer, with Derek Stephenson and Partners as architects.

They have attempted to design the new building around the church, but not so timidly that modernity is emasculated. The T-shaped building has its cross-piece lying to the south, and the elevations are modelled into a series of bays which are responds to the sides of the Thomson tower. The linear stylisms of the columned temple front are also picked up and, on a larger scale, the idea is developed in the ribs which encase the new blocks. The northern block is kept low and in conversation with the parallel block of the church, while the main block is in three sections each of which repeats the height of the portico, and the entire development is placed on a dominated the foreground rather than appearing as an appendage to stiffen the whole group. The public will now be able to enjoy Thomson's architecture at close quarters by threading through the various parts from one court to another and by using the terraces to arrive at the street again. This intermingling of old and the new, public and private, is designed both to benefit the old architecture and to bring trade to the showrooms at street and terrace level. JAMES MACAULAY

DE STIJL EXHIBITION

Hampstead Artists' Council have had the enterprise to organize the first De Stijl exhibition to be held in Britain, timed to coincide with the fiftieth anniversary of the movement. It opened last month at the Camden Arts Centre, Arkwright Road, London, N.W.3, and will continue until March 24th. It has been sponsored by the Netherlands Government, the Arts Council and the borough of Camden. Designed by Bernard Gay, the exhibition contains a number of original works that have not been seen before in Britain, lent by museums and private collections in Holland. These include paintings by Mondriaan, Van Doesburg, Huszar and Van der Leck, furniture by Rietveld and Van Ravesteyn and a variety of architectural models, photographs and documents, including issues of the De Stijl magazine. A model of Gerrit Rietveld's Schroder house is supported by paintings of its exterior and interior as well as detailed photographs.

RELIANCE REWARDED

The factory at Swindon by Norman and Wendy Foster and Richard Rogers, illustrated in the AR in July 1967, has gained the newly promoted *Financial Times* Industrial Architecture Award. The clients, Reliance Controls Ltd., actively sought a young firm of architects and, according to Lord Robbins, chairman of the *Financial Times*, were well pleased with the result—a triumph for youth and intelligent clients. Booker Brothers, who partly own Reliance Controls, are headed by Lord Campbell the chairman of Milton Keynes development corporation, which promises well for the new town of Milton Keynes also.

CANTERBURY RIVERSIDE

Though many people may be inclined to write Canterbury off as a lost cause* when confronted by its vast open car parks and streets afflicted by planning blight, another view may be taken. While there is space there is hope. So long as open ground inside the city walls lies undeveloped, there is still the opportunity to use it well. (Not for instance for bulky multi-storey car parks, the cause of a present dispute.) Several such areas of open ground exist on the banks of the River Stour as it flows through the city, tucked away behind the street facades. Potentially these are of great amenity value, but today the whole riverside in the built-up area of the city appears to be neglected. The river itself, instead of being slow, deep and suitable for boating, as it was up to the last war through careful control of the weirs, now rushes through at a pace which makes it unusable. Added to that, its banks are a sorry mess of overgrown allotments and scruffy wasteland littered with old car bodies. Also there is no continuity from one open area to another.

Though these areas are in fact designated in the Town Map as public open space, Greyfriars. potentially the most attractive area, is shown bisected by a relief road which would spoil it. Some idea of what the riverside could be like, given imagination, is shown in a report† produced by a local society, The River Stour Group. They warn against opening up the river too much and draw attention to its potential for mystery and unexpected beauty; contrasting its welcome quiet to the noise of the busy streets a few feet away and showing how footpaths along it could be incorporated into the normal living pattern of the town.

HOUSING AND THE ENVIRONMENT

The AR special issue with the above title, published in November, has been in great demand and all copies of the initial printing were soon sold. It has now however been reprinted, and copies are available from the publishers at a price (which applies to this special reprint only) of 10s. 6d post free.

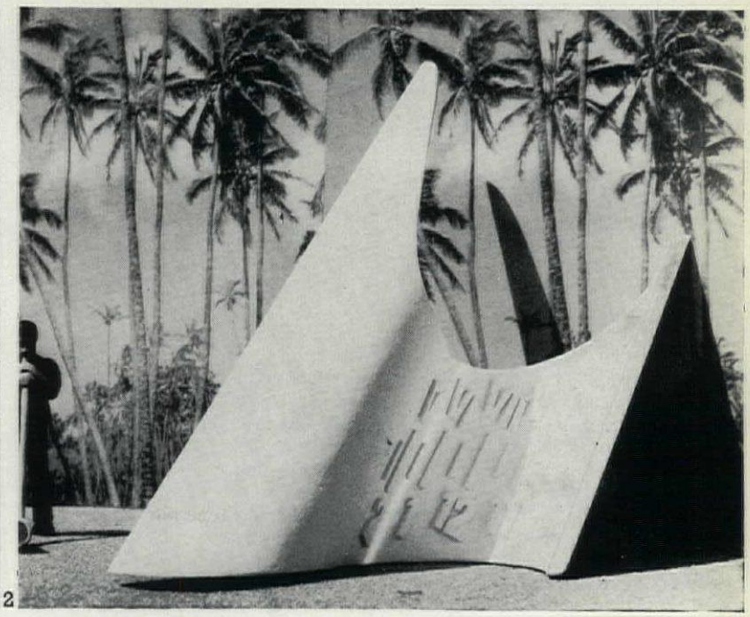
SUN SCULPTURE

A Swiss engineer, Herman Egger, of Zurich, has invented the sun monument shown in 2—a sculptural version in white concrete of the traditional sundial It can be built in any size. Certain hours are marked in the usual way by the shadow of two obliquely orientated straight-edges falling across the Roman numerals; and the remaining hours are marked on the Arabic numerals by a line of bright light reflected from a strip of mirror attached to the same two edges. In the photograph the line of light shows a solar time of 1.30 p.m.

MOODS OF YALE

Yale University Press write to point out that the correct title of the book on the buildings of Yale, reviewed in the November 1967 AR under the above title, is *Yale: a Pictorial History*. It is published by the University Press at 72s.

* See 'Canterbury: Historic Town or Write-Off?' By Lewis Braithwaite. AR, October 1967.
† *River Stour—Canterbury Section*. Canterbury Society.



2

correspondence

OLD AND NEW TOWNS

To the Editors.

SIRS: Your November issue on Housing and the Environment was of particular interest to those of us concerned with the development of new towns. Unfortunately, it gave the impression of being carefully 'angled' rather than strictly impartial. A statement of personal opinion is, of course, always acceptable; but, when the opinion is supported by unfair photographic comparisons, we are entering the realms of the unjust.

I refer in particular to the photographs of Tewkesbury and East Kilbride. I cannot speak for Tewkesbury, but the photograph of East Kilbride is at least seven years old, and shows a section of the town still under development. A photograph of the same area would look very different today. Moreover, a comparison between a town of some 6,000 people and one of 57,000 (with a 100,000 target) is quite unrealistic. While the compactness of Tewkesbury is very acceptable in view of the proximity of the surrounding green belt, I hate to imagine the effect of siting seventeen Tewkesburys side by side in one solid mass. This is, in essence, what you are suggesting when you criticize 'The sprawling residential estate.'

As you yourself imply, whatever the current fashion may be in planning circles, the great majority of people still prefer to live where they can look out upon grass, trees and flowers, not a concrete jungle of high-density housing and hard landscaping. What you mean by 'a properly integrated town,' I do not know. If you honestly believe that a town with ample gardens, open spaces and playing fields, and, at the same time, the second highest housing density of Britain's twenty-three new towns, cannot be properly integrated, I suggest you visit East Kilbride to prove to yourself that you have not done your homework properly. I am an Englishman, and I adore the historic merits of old towns like Tewkesbury. But I would rather live in East Kilbride.

Yours, etc.,

P. WIGLEY

(Public Relations Officer, East Kilbride Development Corporation)

. . . TO WHOM CREDIT IS DUE

To the Editors.

SIRS: In your November 1967 issue on 'Housing and the Environment' you followed the well-established practice of attributing schemes to the chief architect of a local authority, or else to the principals of a private practice. Most architects will realize that this is often humbug, particularly as far as large local authorities are concerned (how many schemes have been credited to Hubert Bennett in which he has not been directly involved?) and it is surely the duty of magazines such as yours to find out who was responsible for the design and supervision of projects, and to name the people concerned.

I think that this is a matter of some importance, firstly because the impersonality and poor quality of some schemes may be due to the anonymity in which their design is cloaked, and secondly because, with the continuing centralization of both local government and private practice, the chief architect becomes less and less directly involved with individual schemes. In many cases the chief architect is nothing more than a figurehead whose reputation rests solely on the work of young architects, mostly trained since the war, who are under his nominal command.

Incidentally, is there any significance in the fact that, although local authority architects are happy to have their name printed beside illustrations in magazines, when it comes to objectionable and restrictive notices placed on blocks of flats (some of which were shown in your last issue), they themselves retreat into anonymity?

Yours, etc.,

W. P. J. SMITH

London N8.

The Editors reply: Dr. Smith has a strong case, and in fact when the AR illustrates, in a normal issue, a building by a public authority architect it does list the whole hierarchy, starting with the chief architect nominally responsible and descending through the deputy architect, the divisional architect and the group architect to the actual job architect and even adds the names of his assistants if they are obtainable. This is undoubtedly the right thing to do, but in a special issue like the November one in which many jobs are illustrated and referred to in a running text, it is impracticable to incorporate a whole list of names in such a text, and the sensible thing seems to be—especially in a critical commentary—to name the man ultimately responsible.

In general, however, the more often architects are willing to disclose the name of the actual designer of a building the more often, as Dr. Smith says, can justice be done—and the AR will certainly publish their names. His final question is not one the Editors can answer.

book reviews

PROPRIETY AND PLAINNESS

ADOLF LOOS. *By Gustav Kuenstler and Ludwig Muenz. Thames & Hudson. 84s.*

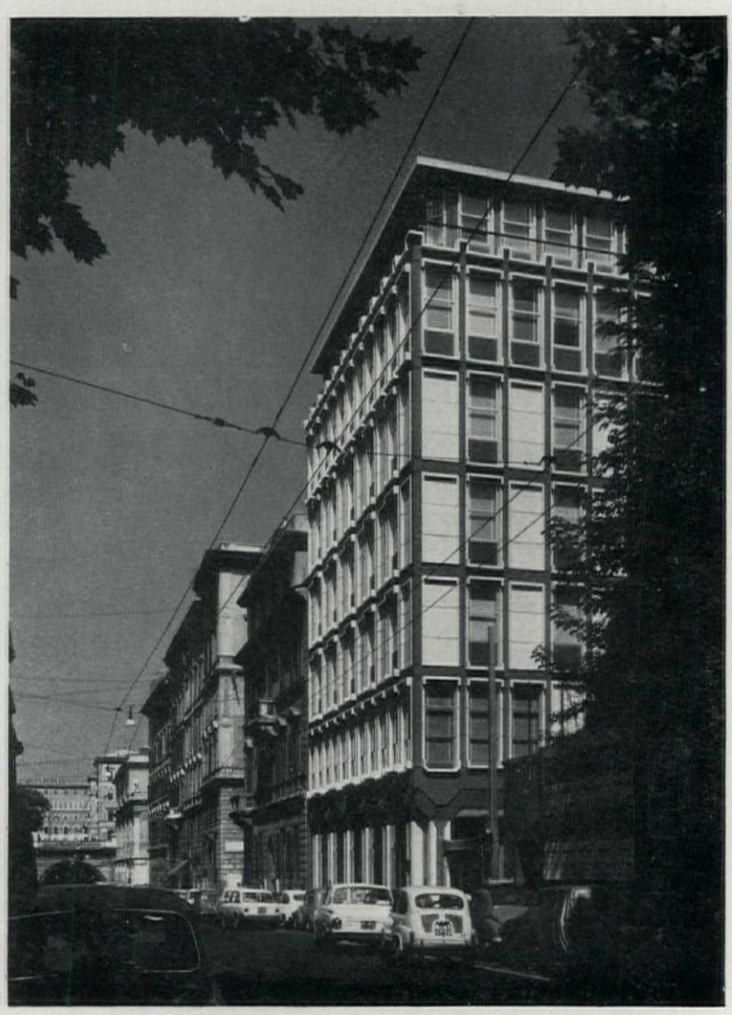
Loos has long figured in the hagiographies of the modern movement, if not exactly as a St. John the Baptist (for his hostility to Le Corbusier in Paris in the 'twenties is well attested) then at least as one of the minor post-exilic phophets, heralding the promised land. Quite why this should be so is a nice point to determine. On the face of it, Loos's notorious theoretical dislike of ornament, so important for the self-esteem of modernists, is just another of those irrelevant side-issues, whose true aspect is shown in the heavy-handed Schinkelisms Loos perpetrated whenever he thought he was working for Miss Hannah Arendt's Public Realm; which comes down to saying, as Dr. Banham keeps telling us, that most so-called architectural revolutions of the last two centuries have not been so much concerned with functional (that is, social) problems and their technical solutions in an increasingly socialized and industrialized urban community, as with the impertinences of formal propriety and impropriety: something on which his recent Ruskinian defences of the New Brutalists suggest that Mr. Banham should now come clean.

As a matter of fact, Loos's bizarre anglophilia, and his feeling, which clearly bothers Dr. Pevsner (who introduces this book), that Doric columns are edifying, are probably connected, as are his strangely misleading notions about the norm and the standard, all of which Le Corbusier apparently swallowed cold. A fashion for what was taken to be English philosophical matter-of-factness as expounded by Locke and Hume, and for English scientific and social matter-of-factness as expounded by Mill and Bentham, was very current among the intellectual avant-garde of the Viennese bourgeoisie in the 'eighties. It is ironic to think that at this time, Greene and Bradley at Oxford were worshipping Kant and Hegel. The Viennese admirations were variously passed on to Einstein by Mach, to the early Freud, and to the later Viennese positivist school of Carnap, von Neurath and Wittgenstein.

Loos seems to have treated English and Athenian country gentlemen as though they were a sort of natural nobility we would all do well to emulate. Wright may well have had Loos in mind when he coined his disparaging phrase: 'deflowered classic,' for Schindler joined him straight from Loos's office in 1913. Wright's and Le Corbusier's admiration for even the later work of Lutyens (Wright wrote Lutyens's obituary in the Studio magazine in 1942) suggests that this was so. Wright and Loos are no more compatible than, say, Lawrence and Russell, or Rousseau and Hume.

The Loos solution to the problem of combining propriety with plainness is impossibly middle-class and technically *retardataire*. If one simply strips traditionally constructed buildings—and all Loos buildings are traditionally constructed—of their ornaments, the maintenance of adequate fit between the finishes of various building trades accustomed to very different standards of dimensional tolerance becomes extraordinarily difficult and expensive. Loos's example in this respect was followed by Mies and Le Corbusier in the 'twenties. Even by English yardsticks, Loos's planning is both clumsy and muddle-headed: why so many staircases in all the houses? Is it so that the owners and their children and guests on the one hand, and the numerous staff upon which the upkeep of these expensively simplified buildings must be presumed to depend, can lead diplomatically segregated lives? And why, with so many staircases and two passenger lifts, must Mlle. Josefine Baker's food be carried up from the kitchen to the

In this office building in Rome, 3, the architect, Giulio Sterbini, has made a vigorous effort to retain the the scale of the old buildings alongside while at the same time frankly expressing modern frame construction. His window treatment, in particular, ingeniously echoes the punctuation and rhythm of the strongly modelled window surrounds on the classical facades, as seen obliquely up the street.



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dining room on the first floor by hand? If a good French academic plan broke so obvious a rule of functionality, one hopes it would do so with greater reason and more wit.

Loos's irrelevant attitude to ornament is bound up with his misleading ideas on utensile type form: you are exemplary if you have a tea-pot by Bateman, but probably an unimprisoned degenerate if you have a trysting cup in mauve rock crystal by Fabergé. Now, apart from the fact that the English upper bourgeoisie are statistically slightly more likely to have Bateman silver than Fabergé crystal, Loos seems not to have realized that few artefacts can be expected to remain more stable than the social habits, the markets and the manufactures which give rise to them. Following Loos in the law, if not the letter, the Danish anglophile architect, S. E. Rasmussen, staged an exhibition of English goods in Copenhagen in the 'twenties, in which he maintained that the English displayed a true, because natural and unstudied, artistic talent: there was a range of sporting goods, probably some Jermyn Street footwear, headgear and weatherfenders, and the inevitable briar pipe; and some (non-dada) sanitary porcelain. The English were neither amused nor edified, and who, in the circumstances, can blame them? There are depressing signs that our designers have now caught up with Loos, and exhibitions of British goods abroad are becoming embarrassing with studiedly casual upper-class good taste.

THOMAS STEVENS

BASTION BUILDERS

THE RENAISSANCE ENGINEERS. *By Bertrand Gille. Lund Humphries. 56s.*

That warfare is a spur to mechanical invention was no less true in the Middle Ages and Renaissance than it is today. The Renaissance engineers were men of many parts: artist and architect, technologist and scientist; but the basis of their careers was usually that of military engineer—the designer of fortifications and siege engines. This is true of even the greatest, whose fame today lies in their contributions to art and science.

The author of this book is Archivist at the Archives Nationales, Paris. His aim has been not simply to provide a history of technology at the time of the Renaissance, but rather to show that the engineers of the *quattrocento* were not the innovators they sometimes appear to be. Their work was based on the vast accumulation of knowledge which had been built up from antiquity to the Middle Ages. It was derived from the Hellenistic schools of mechanics, from the Byzantine inheritance and from the Arabs' interest in automata. The treatises of Villard de Honnecourt, Konrad Kyeser, Guido de Vigevano, etc., show the inventiveness of medieval Western Europe. This dependence on previous thought is borne out in the extensive criticism of the technical contribution of Leonardo da Vinci, who here does not appear the fertile inventor that is often claimed. The contribution of the Renaissance engineers was in their application of these mechanical discoveries. M. Gille illustrates his arguments lavishly. In this well-produced book there are fifteen plates and more than 160 separate line drawings, nearly all derived from original manuscripts.

In his survey of the growth of artillery fortification in Italy in this period, M. Gille repeats the claim that Francesco di Giorgio Martini was the originator of the angle bastion. Recent studies give more credit to Giuliano da San Gallo as the individual more likely to have given the impetus to this defensive form, which was to be fundamental to military engineering until the turn of the nineteenth century. Although Gille thinks the citadel of Caprarola (1515) to be more significant a turning point than the bastions of Verona (1527), in fact the angle bastion was evolving in Italy in the latter part of the fifteenth century. It is to be noted that as far north as Norham Castle on the English bank of the Tweed there are embryo bastions of Italian inspiration as early as 1513–15.

The development of gunpowder provided one of the main elements of change which took place in Renaissance engineering. Previously, engineers designed war machines for scaling walls, for elaborate chariots and floating bridges as well as missile-throwing machines of all kinds. Now there was a growth of specialized professions. The military engineer for the next 300 years was a designer of fortifications, no longer a master of machines, and moved further into the world of architecture and building.

A. D. SAUNDERS

SCOTTISH CHRONICLE

THE HISTORIC ARCHITECTURE OF SCOTLAND. *By J. G. Dunbar. Batsford. 105s.*

Mr. Dunbar knows Scotland well, and his book achieves a fair measure of success. There is a nice balance of historical comment and accurate architectural description, and a great deal of information, formerly to be found only on the files of the Scottish Monuments' Record, is now available in published form.

Extending from the Middle Ages to the early Victorian period, the book divides into seven long chapters dealing with Castles (down to the late Georgian artillery forts), Lairds' Houses, Country Mansions, Abbeys and Churches, Burgh Architecture, Industrial Architecture and Rural Buildings. It provides a good introduction to each of these categories and gives a particularly absorbing account of the development of the laird's house in Scotland—a type which, as the author asserts, has not been much studied previously. There are, too, many intriguing references to other little-known aspects of Scotland's building history: Rob Roy's attack on the tiny house of Old Auchentroig in 1710; or the Scottish medieval Burgh of Roxburgh, now a grassy haugh near Kelso, completely forgotten and awaiting systematic excavation. Such references as these are important, for they help to enliven the account of what can become a rather grey subject. Not all the historic architecture of Scotland merits attention on aesthetic grounds, and local curiosities (especially when they are not illustrated) make for monotonous reading. Though it is written in a detached and uncompromising way, the text is brightened by unexpected passages of quiet humour, and only occasionally lapses into listing.

Yet it may be asked whether several opportunities have not been ignored. Hardly anyone who is not already interested in the subject will be won over to Scottish architecture by this volume. For its price, it might have been much more generously illustrated: just over 50 line drawings and 150 photographs hardly provides an adequate visual complement to the, at times, very particular text; and readers who do not know the terrain already must be discouraged by frequent factual descriptions. Indeed, it is nowhere very clear for what type of reader the book is intended. The lists of sites worth visiting—useful in themselves—suggest that it is intended for the interested general reader, yet the text makes no concessions to popularization or at times even to readability. At the same time the book's usefulness to scholars and specialists is greatly diminished by the complete lack of any footnotes or comprehensive bibliography, and by the scant indication of sources in the text itself. To cover this the book might have benefited from being a little longer. As it is, architecture from the second half of the eighteenth century onwards is dealt with in a hasty, almost breathless, manner. Though what is written is hardly ever wrong, inaccuracies of implication are more common, and the importance of an architectural development or an individual's career can be falsified by a perhaps necessary, but nonetheless excessive, selectiveness. It is surely wrong in a review of British Neo-classicism to ignore the presence of Isaac Ware in Scotland, yet later to write up William Chambers; to list octagonal Georgian churches and omit James Adam's Gothick St. George's Chapel in York Place, Edinburgh; or to tell again the story of James Gillespie's marriage at the expense of a more representative selection of his country houses—of these the Lee, Lanarkshire, should surely have been preferred to Duns Castle, which was, though this is not made clear, only a remodelling.

Surveys cannot of course satisfy everyone, and the inclusion or omission of an individual building will always be a matter of opinion. They can however demonstrate the evolution of a pattern, as Mr. Dunbar ably does when discussing castles or laird's houses; and yet here again some of the possibilities offered by the format of the book seem to have been overlooked. The typological classification adopted has its drawbacks (the introduction of any sustained biographical material is rather awkward and involves a considerable number of page cross-references), but it should be admirably suited to the exposition of the development of characteristic plans, the investigation of their sources and analysis of their influence. In the history of Scottish architecture, such an exposition has long been a desideratum of the Georgian country house, yet it is not attempted here.

In general the architectural monuments of the country are described and sorted into categories, but one would welcome a greater attempt to interpret them, and to assign significance. The author's approach is analytical rather than synthetical, and the book that emerges is exactly true to its title—a chronicle, and an accurate and scholarly one, but not a history of Scottish architecture.

ALISTAIR ROWAN

FRENCH ROMANESQUE

ROMANESQUE CATHEDRALS AND ABBEYS OF FRANCE. *By Marcel Aubert and Simone Goubet. Nicholas Vane. 8 gns.*

'Vulgarization' has always been regarded as a speciality of the French. This book is a model of the kind. The late Marcel Aubert wrote it as a sequel to his book on French Gothic Cathedrals which came out in 1958 (in English in 1959), but already in 1929 he had given a general, beautifully illustrated account of Early Gothic French sculpture and in 1946 an even more general account of all medieval French sculpture. At the same time he was a scholar in his own right. His monograph on Notre Dame in Paris, published as early as 1920, is as much a standard work as his two volumes on French Cistercian Architecture (1947), and his articles in the learned journals are legion. One must have heard him speak to audiences of laymen as well as scholars to realize that he enjoyed both equally.

The outcome of this commendable attitude is books such as this: about a hundred pages of informative text, generalizing of course and avoiding the kinds of problem which fascinate the specialist, but keeping away from platitudes as well and in fact propounding here and there views not at all uncontroversial. Aubert died before the book was published; Mlle. Goubet provided the admirable illustrations, 576 of them, and the notes to the illustrations. The notes vary in detail from an unhelpful 'eleventh-twelfth centuries' for, e.g. Thaon, to a report on the dating of Conques quoting both M. Gaillard and M. Deyres. The translation is on the whole well done, though what is one to make of 'a squinch dome on nervures' which is in reality an eight-sided arc de cloitre vault, what of 'a file of squinch domes,' an 'arch adorned with ova,' or 'arcades decorated with bezants'?

The material illustrated is splendidly comprehensive, and even the most intrepid English traveller and the most tenacious English specialist will find plenty of churches unvisited by him and quite a number of unexpected motifs. Examples are the octagon of St. Michel d'Entraygues with its eight apses, built 'ad recipiendum Christi pauperes,' Champagne with its domes crossed by transverse arches, Châteaumeillant and its intricate arcading between choir and side chapels and Aubiac with its square crossing tower crossed by two broad ribs which run from the middle of one side to the middle of the opposite side. There are six maps indicating all the places mentioned, just over forty ground plans (not enough) and a short glossary.

N.P.

BOOKS RECEIVED

INTRODUCTION TO AFRICAN ART. *By Baron de Rachewiltz. John Murray. 45s.*

HOUSES OF GOD. *By Jeannette Mirsky. Constable. 50s.*

PROFESSIONAL MEN. *By W. J. Reader. Weidenfeld & Nicolson. 36s.*

BUILDING FOR WORSHIP. *By Stephen Smalley. Hodder & Stoughton. 3s. 6d.*

POMPEII AND HERCULANEUM *Introduction by Sir Mortimer Wheeler. Spring Books. 15s.*

The discovery of both the historical and the pictorial value of early Welsh pithead machinery by a German enthusiast is reported in an article on page 155 of this issue. The enthusiast is Bernhard Becher—photographer and pioneer industrial archaeologist from Düsseldorf. Here is one of the photographs he took during a recent exploratory visit to South Wales. It shows the shaft winding gear at the Deep Duffryn colliery at Mountain Ash, built by local mineworkers in 1842 and still operating.

Peter Jay

THE INTERIOR ENVIRONMENT: SENSE AND NONSENSE

In this issue the AR introduces its expanded Interior Design section. Peter Jay re-examines some of the basic assumptions about the environment that architects create inside their buildings; in particular he queries the current belief that we are more concerned about the design of interiors than were previous ages. He argues that, in the absence of environmental standards, modern technology only makes it more complicated to achieve the same level of design.

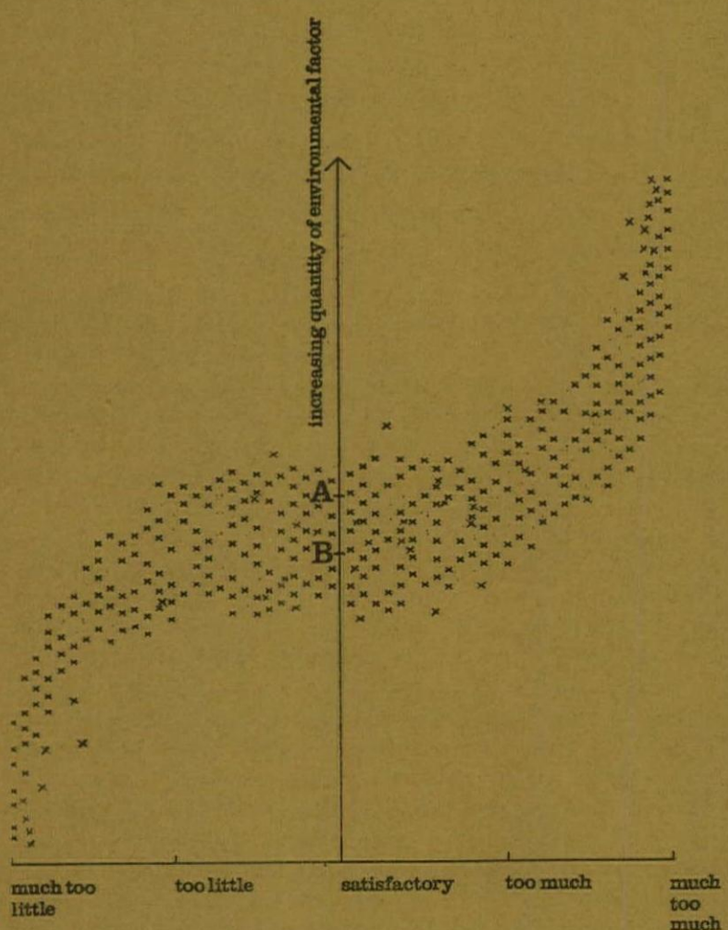
Concern for the quality of the environment inside buildings is not new. It has always been regarded as of the utmost importance and in each country traditional construction has always taken account of it. From classical times the literature is liberally scattered with advice on how to site and plan buildings in such a way as to promote health and mitigate the rigour of the elements. The Roman hypocaust was probably a more satisfactory heating system than anything we have today, while in hot climates large buildings had massive walls, ample provision for through ventilation and means of screening the interior from direct sunlight. Where building technology was inadequate to create comfortable conditions throughout the working day, social conditions were adjusted (as by the siesta) to ensure that no unreasonable demands were made upon the population.

As architecture became less purely traditional and developed into a separate discipline with a heavy overburden of academic theory, this basic understanding of the conditions for a pleasant internal environment was obscured. Even then, technical limitations ensured that most buildings were of heavy construction and the proportion of glazing could not be too high; the final destruction of the innate self-regulating tendency of buildings had to wait upon developments in structural engineering which made it possible actually to build the delicate structures with glass walls of which theorists had dreamed since the flying buttress was invented. The result has been that, whereas the traditional building, even with no services as we understand them at all, moderates changes in the climate and is generally cooler in summer and warmer in winter than the exterior, the modern building is an amplifier of climatic change and becomes hotter in summer and, on the roof at least, colder in winter than outside. This applies both to buildings of concrete frame construction with light cladding and a large area of glazing, and to most industrialized buildings, largely independently of the proportion of glazing, since the fabric has to be very light for ease of handling.

We can only make such buildings habitable by installing more and more elaborate engineering systems to provide the self-regulating tendency which the fabric itself used to provide automatically, and we are becoming increasingly worried about environment because the engineering does not always work very well. It is not that we are more concerned about the environment than our predecessors, it is simply that we understand less well how to control it and the more we struggle to redress the imbalance of our buildings the more obvious the gaps in our knowledge become.

Although a traditional building will moderate climatic changes, it will not eliminate them altogether, whereas engineering systems are generally designed to create substantially constant conditions. It is therefore necessary to know what the performance target should be, and there has been a great deal of research to find the 'optimum' environment. Before it became possible to maintain constant conditions nobody ever supposed that there might be such a thing as an optimum, and it should not take research to confirm that, when relaxing at home by the fire, we often like to shift our position, to switch on the light, to open

a window and so on. Much work during the last half-century has merely served to confirm this obvious proposition, and the question of an optimum is unlikely ever to have been raised had it not been for the engineer's need to have a simple performance specification. It turns out that human beings are rather more complex than engineers would like to have them, and it is only possible to obtain widespread agreement on defects. If any particular factor, such as lighting or ventilation rate, is increased from a low level a few people will say they are satisfied in advance of the rest while after further increases some may start to complain of excess even before all the others are satisfied. If each observer expresses his reactions to the environmental factor as a 'comfort vote' on a seven-point scale in which minus 3 corresponds to 'far too little,' 0 to 'just right' and plus 3 to 'far too much,' it is possible to obtain a continuum of numbers from the integers either by averaging votes of groups of people or the votes which the same person makes under similar conditions on different occasions. Typical results are shown in diagram 1—even when every



1, *typical results of any survey of an environmental factor which can be quantified, against 'comfort votes'. It is supposed that the votes themselves, or averages for many votes, can be expressed as numbers and plotted as shown. It would be usual to say that most of the population is able to adapt to the values between points A and B, and these would be set as the upper and lower design limits.*

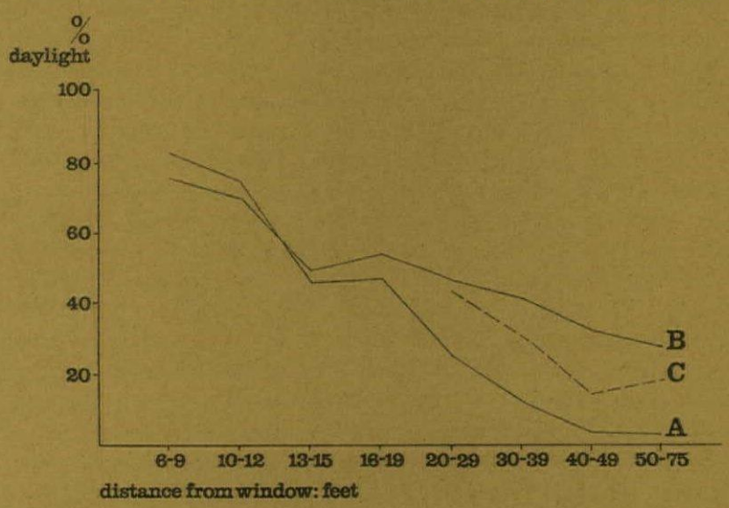
care has been taken to ensure that the figures are statistically reliable, no optimum emerges.

It is worth noting that the spread of results occurs not merely as between different people on the same occasion, but as between the same people on different occasions when it often turns out that the lower limit for comfort during one test lies outside the upper limit on others. We would normally say that the zone bounded by A and B in diagram 1 is that within which most people can adapt themselves without too much trouble, but this is a long way from the 'optimum' an engineer would really like to have, although it ought to be a sufficient guide to design. In some fields enough data is already available, but in others research workers are unsure even what physical aspect of the environment they ought to be correlating with 'comfort.' Lighting is a good example since, as is generally known, most specifications are expressed in terms of the illumination on a plane surface—the reference or 'working plane'—and in general terms it is known what illumination is needed for easy visibility of flat surfaces. Even the least imaginative lighting engineer is perfectly well aware that we need at times to see surfaces of all orientations, but without an adequate technique for dealing with the problem we continue to think in terms of the one reference surface. The Pilkington survey of office environment[1] was concerned to find out how people react to the lighting conditions in deep offices where those sitting at some distance from the perimeter receive very little daylight on their desks although they can see the windows perfectly well. The upper and lower solid lines in diagram 2 show the results of asking workers to estimate the proportion of daylight on their desks, and it will be noted that many of them grossly overestimated its contribution. Since this work was done, Lynes and his collaborators[2] have shown that subjective estimates of adequacy of lighting often correspond not to the illumination on a plane surface but to the illumination averaged in all directions, called the scalar illumination. This suggests the need to re-examine the Pilkington data, and the dotted curve in diagram 2 shows the calculated contribution of daylight to the scalar illumination at the desks. These figures correlate much better with subjective estimates, and as the accuracy with which the 'actual' illumination on the horizontal could be measured was rather poor, it is quite possible that the occupants' estimates were a good deal better even than the dotted curve indicates.

The conclusion based on horizontal illumination was that, so long as people can see a window, the quantitative contribution of daylight to illumination is insignificant and lighting can be designed without reference to it. The conclusion based on scalar measurements is that we should design with the quantitative contribution of daylight very much in mind. In fact there are other grounds[3] for thinking that the second deduction is as unsound as the first, but this example is quoted merely to show how careful we should be in trying to correlate subjective reaction with objective measurement.

Concurrently with the investigation into optima and acceptable design ranges for particular physical parameters, it has been realized that the design professions really know very little about how users react to buildings. For instance, although it is taken for granted in the architectural profession that under the guidance of the architects' and building branch of the Department of Education and Science, school building in Britain has made enormous strides since

the war, this belief is founded mainly on the assertion of the DES itself and has not been backed by any published user survey. Such user surveys as have been carried out, pioneered by Peter Manning, formerly of the Pilkington Research Unit at Liverpool, have produced results that are apparently humiliating to the design professions. It appears that most people are largely indifferent to those aspects of buildings upon which designers lavish so much care, and their general assessment, where not related to purely sociological



2, results of a survey of lighting in a very deep office: A, measured contribution of daylight to the horizontal illumination on desks. B, occupants' estimates of the contribution of daylight to the illumination on their desks. C, calculated contribution of daylight to scalar illumination at the desks.

and managerial considerations outside the control of the architect, are determined by such things as the size and luxury of the lavatories.

Other user surveys published by the Building Research Station have served to underline the imbalance of the highly glazed building in which the pursuit of good daylighting has resulted in a choice between either intolerable traffic noise or bad ventilation. These surveys were greeted with pious horror by architects who implied that they had been misled by the experts. This reaction is disingenuous since the real reason why large areas of glazing are now so common has nothing to do with environmental physics but is due to the ideas of artist/theorists such as Le Corbusier and Mies van der Rohe. It seems paradoxical that while the one is associated with the assertion that 'form follows function' and the other with the contradiction that 'function follows form' the result has been the same in either case. Furthermore, architects have no excuse for not realizing the consequence of overglazing, since the poor environmental conditions in some of Mies van der Rohe's buildings are well known.

One of the things which all user surveys have shown beyond doubt is that the environment is noticed only when it is bad. An investigation of office lighting[4] indicated that those whose lighting was poor ranked lighting high in the list of important factors in offices, while those whose lighting was adequate ranked it much lower. It therefore seems the final absurdity in this tale of muddle and mistake that we should now be told that close concern for the quality of the environment is one of the main characteristics of modern architecture, and that phrases such as 'an aesthetic of the environment' should find their way into print. If architects do seem ready to swallow this type of thing it may be because the complexity of modern services makes environmental control seem very complicated although, as was shown at the beginning of this article, it is only difficult if fashion dictates a mode of design which makes it so.

Again, so much effort is now expended on cramming services into buildings that the weary architect may long for the apparent freedom of his predecessors. He could perhaps take comfort from thinking of the complexities of chimney design in large nineteenth-century buildings, and the frequency with which complaints of smoking fires appear in literature. However, there is a point here which is worth examining in greater detail: the building can be thought of as a sub-system of a main system which includes the external climate with which the building interacts. The occupants again react with the internal climate so produced, while services are another sub-system which reacts both with the internal climate and the occupants. The end product should be an internal environment which the occupants find satisfactory.

It is possible to design a system which produces acceptable conditions even in the English climate with a very small services component, and the Wallasey School[5] is a most interesting example of this kind. Any sensibly designed building of heavy construction without too much glazing reacts with the climate to form a system which only runs outside the limits of tolerance relatively infrequently and where a modest contribution by services will be sufficient. However, the less the fabric of the building itself can provide the degree of control which the system requires, the more is it necessary to increase the services component, with results of which we are all too well aware. This is why we say that the elaboration of services now found necessary is primarily the result of the failure of the fabric to regulate the internal climate well enough by itself.

Great interest is beginning to be taken in early examples of services installations, and historians are at some pains to unearth the measures which Masters of the Modern Movement took to produce an acceptable environment inside buildings. The results have been quoted as the first stirrings of our contemporary concern for human comfort, but this is highly unconvincing. Much of it has little to do with the environment as such but is an example of the patronising interest of an age which imagines itself to be technologically sophisticated in another age which is thought to be less so; but quite apart from this it seems strange that anyone with nineteenth- or early twentieth-century technology at his disposal should be praised for taking a few steps to create conditions which the designer of a Roman villa would regard as a barely adequate minimum.

It may of course be argued that the Public Health Acts and other statutory controls for daylight, ventilation and sanitation show how much more we are concerned for health and comfort than our predecessors. In one sense this is true, but it can hardly be linked with the emergence of modern architecture which, as we have seen, has been travelling in the opposite direction. In any case, the necessity for public

definition of minima for health and comfort can be regarded as an index of the extent to which the building industry as a whole, although not necessarily architects in particular, had failed. Even today many architects regard the regulations not as social needs to be willingly fulfilled but as a tiresome nuisance to be evaded where possible.

All professions operate by setting up models of the human being and then developing conceptual methods of operating on the model. In law we have the 'reasonable man' who serves fairly well so long as we remember to redefine 'reason' at frequent intervals, while in another field we have 'economic man,' forever buying in the cheapest market and selling in the dearest, migrating from decaying to expanding areas, offering himself cheerfully for retraining when his skill becomes redundant and so forth. In fact 'economic man' is not a very useful model as our present financial difficulties indicate. Architects too long operated with an equally unsatisfactory model 'aesthetic man,' responsive primarily to the spatial and visual aspects of buildings and unconcerned with any other features. After trying 'functional man', who was concerned with a school only as a machine for teaching in and a house only as a machine for living in, they now show signs of replacing him by an even stranger monster 'environmental man,' who is always ready to work hard and long provided only that the lighting, heating, ventilation and acoustics are just right. This seems particularly silly when psychologists and sociologists are at least beginning to produce a few facts about how people do react to their environment, but their model is perhaps too complicated for direct use in building design at the present stage.

However, there is no escape from a model of some kind, and as an interim measure I suggest 'expectant man' who compares what he has with what he thinks he has a reasonable right to expect, and is satisfied if the comparison is favourable and otherwise complains. Although all models are at best a necessary evil, 'expectant man' does have certain advantages over both 'aesthetic man' and 'environmental man,' since these two are really nothing more than an extension of the prejudices and attitudes of the designer himself; whereas if we try to design in accordance with *other people's* expectations we might be encouraged to ask some questions about what these others really expect. We would very quickly find that the definition of 'function' itself is related to expectation and prior knowledge, that nobody likes an unchanging environment, that the latter is only noticed when it is conspicuously inadequate and that most people like to think they have some control over the conditions which most affect them.

We must also realize that if people are told that modern buildings are both functional and offer a high degree of comfort, they are being positively encouraged to complain when the result falls short of the standards they have been led to expect. Again, nobody is very clear what either 'function' or 'comfort' really are and we know only that the latter varies enormously from one person to another. It is not therefore only impracticable for the architect to make over-riding decisions about the quality of the environment, based either on technological or an 'aesthetic' grounds—it is wrong that he should even seek to do so. The best he can do is to ensure, preferably by careful design of the building and if this is not possible by employing additional engineering sub-systems, that conditions can at all times be maintained within the acceptable range for most people. Having achieved this he should also ensure that each individual has as much control of the details of his environment as possible. When we have so far rectified the imbalance of modern buildings, architects will then be free to consider the more fundamental aspects of why we need buildings at all and what their real purpose may be.

On the other hand, so long as we insist on designing and siting buildings in such a way as to make them uninhabitable, so long will we continue to be troubled by techniques of environmental control and describe our incompetence as 'concern for human comfort.'

REFERENCES

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2 *Beyond the Working Plane.* By C. Cuttle, W. B. Valentine, J. A. Lynes and W. Burt. Paper P.67.12, CIE Conference, Washington, 1967.

3 W. P. Wells: *Building Science* 1, 57, 1965.

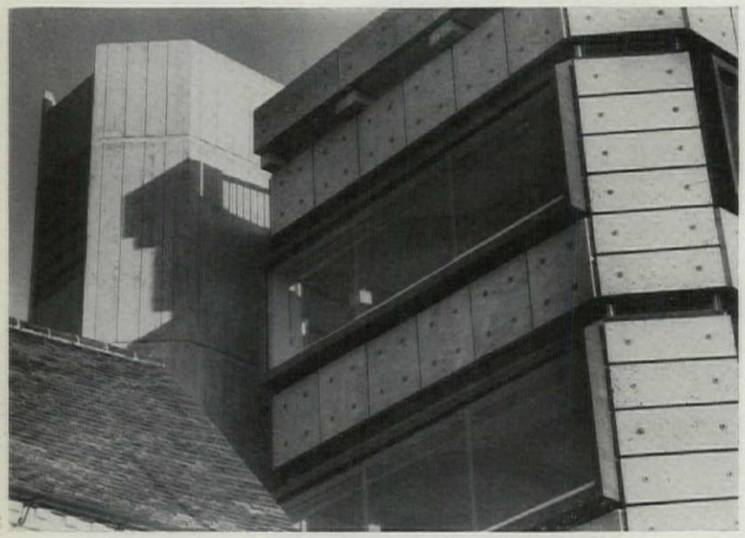
4 D. Archibald and J. W. Whitfield: Medical Research Council Report No. 47/311, APU, May, 1947.

5 E. R. Hitchin, K. Thompson and C. B. Wilson: *Journal of the Institute of Heating and Ventilating Engineers*, 33, 325, 1966.

UNIVERSITY CENTRE, CAMBRIDGE | *architects* HOWELL, KILLICK, PARTRIDGE AND AMIS | *photographs by Eric de Maré*

UNIVERSITY CENTRE, CAMBRIDGE

1 (preceding page), close-up of one bay of the main (riverside) frontage, showing the facing of Portland stone slabs with exposed fixing-bolts and washers. 2, corner view with *in-situ* concrete escape stairs on left. 3, the building from Silver Street Bridge. 4, from across the river, showing the other escape stair (which also gives access to the roof terrace), of which a close-up is given in 5 opposite.



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This building, the need for which was set out in the report of the Bridges Committee, published in 1962, provides common-rooms and dining-rooms and general club facilities for senior members of the university; i.e. those of graduate status and above. It is open to all senior members, whether or not they are already Fellows of colleges, and to their wives.

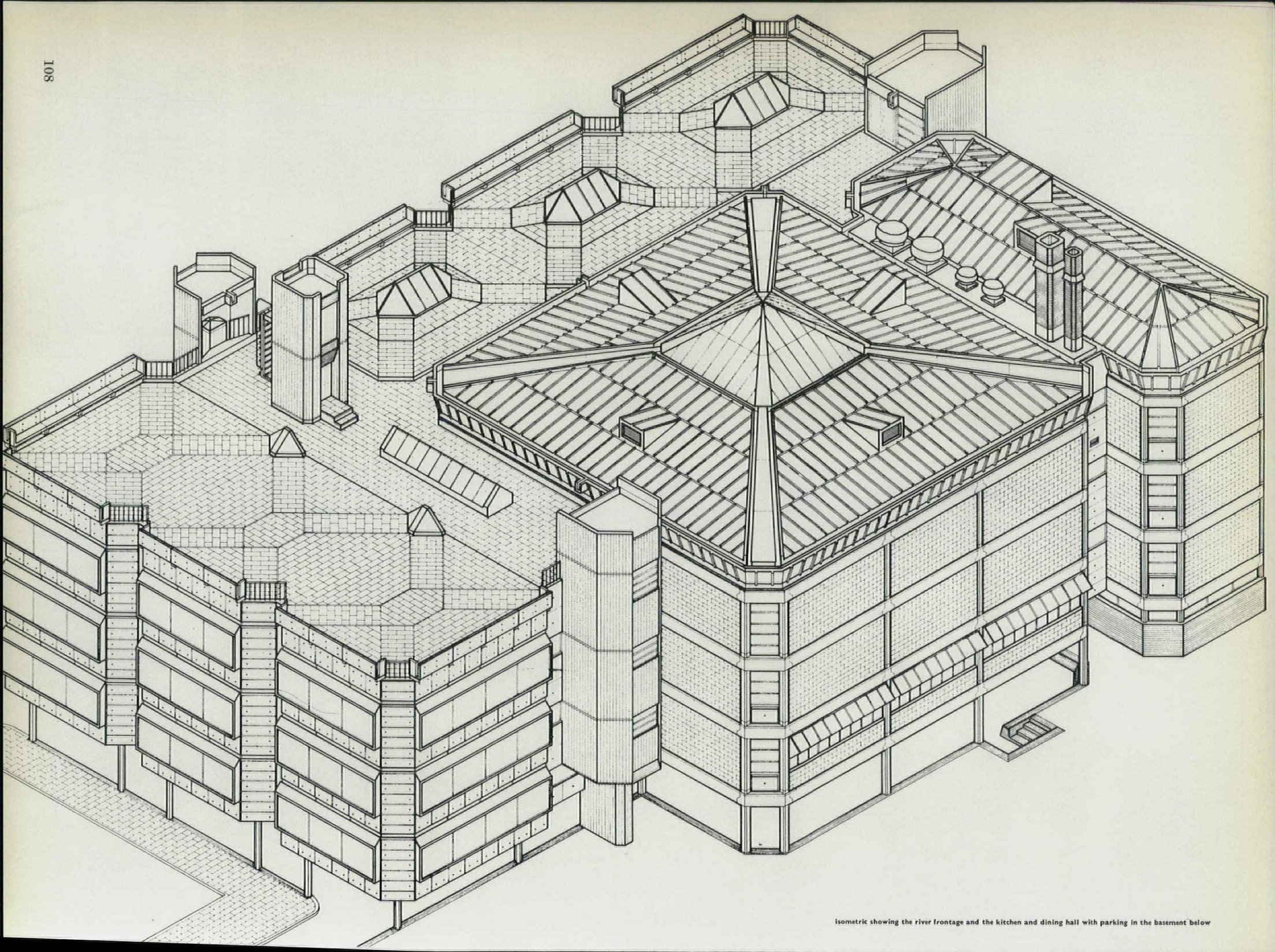
Besides ranges of common-rooms on two levels, a main (self-service) dining-hall, a higher-priced dining-room and private dining-rooms that can be thrown together or subdivided in various ways, the accommodation includes a ground-floor bar and snack-bar, a music room, a billiards room and a roof-terrace surrounded by fixed seating with its own bar.

The site, facing the river between Silver Street Bridge and the Garden House hotel, was too small to allow the kitchens to be on the same level as the main dining-hall, nor could they be at ground level because of car-parking requirements. The ground floor is therefore given to car-park, entrance, cloakrooms and the snack-bar, with the kitchens on the first floor (at the back of the site) and a two-storey, top-lit main dining-hall above them. Occupying the front of the site, and the one side that has a view outwards, are the other dining-rooms and a common-room on the same level as the kitchen and two further ranges of common-rooms above. Glass walls that can be obscured by curtains allow views outwards, through the common-rooms, from the dining-hall and its approaches. The common-rooms on the river front can be sub-divided by sliding partitions. Levels and access are designed so that disabled members in wheel-chairs can reach all parts of the building by means of ramps and a lift.

The structure consists of a precast reinforced concrete frame, post-tensioned with long high-tensile bolts and locked together with in-situ concrete floors. The staircase towers are also in-situ concrete. The common-room area has inset columns supporting hammer-head capitals which hold up an outer and an inner pre-cast ring-beam. Within the beams are hung acoustic plaster ceilings. The remaining solid parts of the interior (corner walls, the convector alcoves, the window-seat supports and the boxes for Venetian blinds which span across the windows) are of pre-cast concrete, finished smooth in white cement. The pre-cast structural frame is grey in colour but also smooth, produced from hardwood moulds given seven coats of synthetic varnish and polished between successive uses.

The rear of the building containing the dining-hall and kitchen has a perimeter column-and-beam structure with infill of limestone-aggregate concrete blocks. Externally the common-room bays are clad with large slabs of roach-bed Portland stone, fixed with exposed stainless-steel bolts and washers. The projecting window-surrounds are covered with lead. The ground floor is paved with brick throughout and at this level only there are brick infill walls. Joinery inside is bleached oak.

Structural engineers, Felix J. Samuely and Partners. Services engineers, R. W. Gregory and Partners. Acoustic consultants, Engineering Design Consultants. Quantity surveyors, G. A. Hanscomb Partnership. For contractors see page 168.



isometric showing the river frontage and the kitchen and dining hall with parking in the basement below

criticism

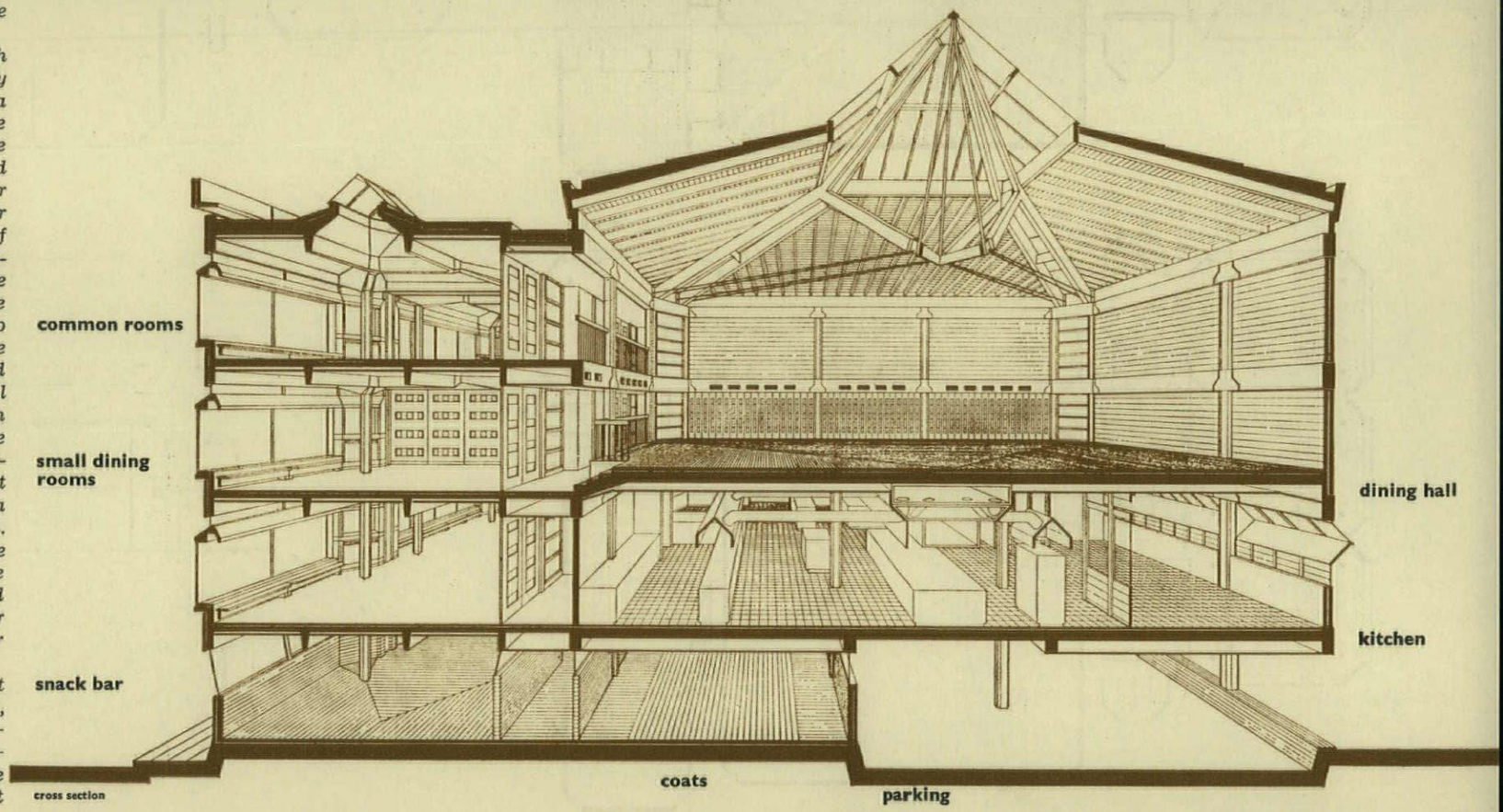
UNIVERSITY CENTRE, CAMBRIDGE

The site was an inspiring but at the same time a difficult one. It looks over (and is seen from) the river and the fen, Silver Street Bridge and the southern end of the Backs, but is small for its purpose and closely surrounded by buildings on two sides. It could have been made larger by demolishing the Mill public-house which was included in the land made available by the University. The architects, however, quite rightly decided to keep the Mill. It is an amenity in itself. Visually it makes a charming foil to the larger bulk of the Centre—such contrasts between domestic and institutional scales being typical of Cambridge—and in any case the small increase in ground area that would have resulted from doing away with the public-house would not have been enough to solve the main problems set by the small site—for example to enable the kitchen to be on the same level as the dining-hall.

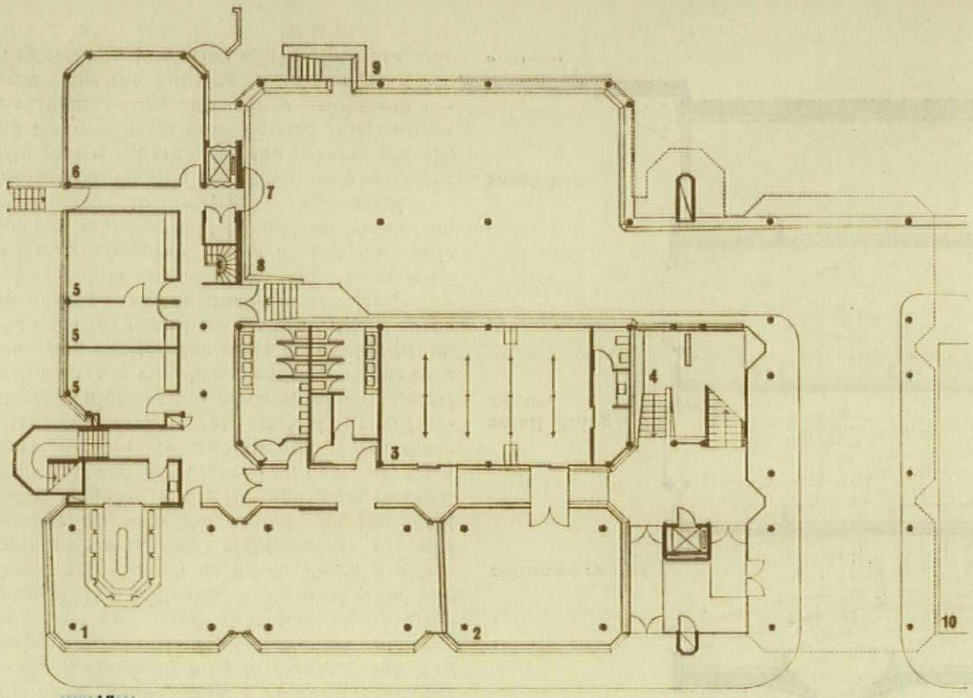
Considering these problems, the plan is both spacious and flexible. Circulation is easy (once you have found your way through a strangely obscure and unimpressive entrance —the very opposite in conception to the monumental portico of a London club), and the architects, with the help of their engineers, have found a successful answer to the problem of how to create a sense of enclosure and intimacy in the large common-room spaces—spaces that had to be large because the potiential membership of the Centre is as much as 6,000. There are two common-rooms, at right-angles to one another, on both the second and the third floors, visually linked through glass internal walls that can be obscured by curtains. Each common-room is sub-divided into three octagonal compartments marked out by free-standing piers at the corners, which support both an inner ring-beam and, by means of a haunched capital, the main outer ring-beam. The effective floor-span is thus reduced to the reasonably-scaled distance of 10 feet. The spaces behind the columns have been used as the discharging points of the warm-air blowers, which would be uncomfortable for sitting near—so the space is not wasted.

The shape of this octagonal compartment is in fact a square with the corners cut off, and the architects have carried this motif—this chamfering of every right-angle—throughout the building. It makes for quite an effective articulation of the structure, but when applied even to the corners of tables it seems little more than a conceit. The difference in colour between the smooth grey concrete of the inner ring-beam and columns and the white concrete of the remaining interior surfaces makes an admirable basis for what the architects call 'interior engineering' (as distinct from interior decorating); it differentiates the main from the subsidiary structure and creates a cool, sober range of colours which the furniture and fabrics continue. It is a sound principle, in a building like this, to leave brighter colour to be contributed by the occupants. The pre-cast concrete surfaces are admirably precise. The double-height dining-hall is handsome, and here again decoration is identified with engineering. The room has a spectacular open timber and tie-rod roof which is carried across the diagonal in spite of the fact that this increases the span, the reason being that the roof-load is then taken by the corner columns, whereas the side walls already take the floor-loads, and loading is thus more evenly distributed—a text-book example of architects and engineers working constructively together.

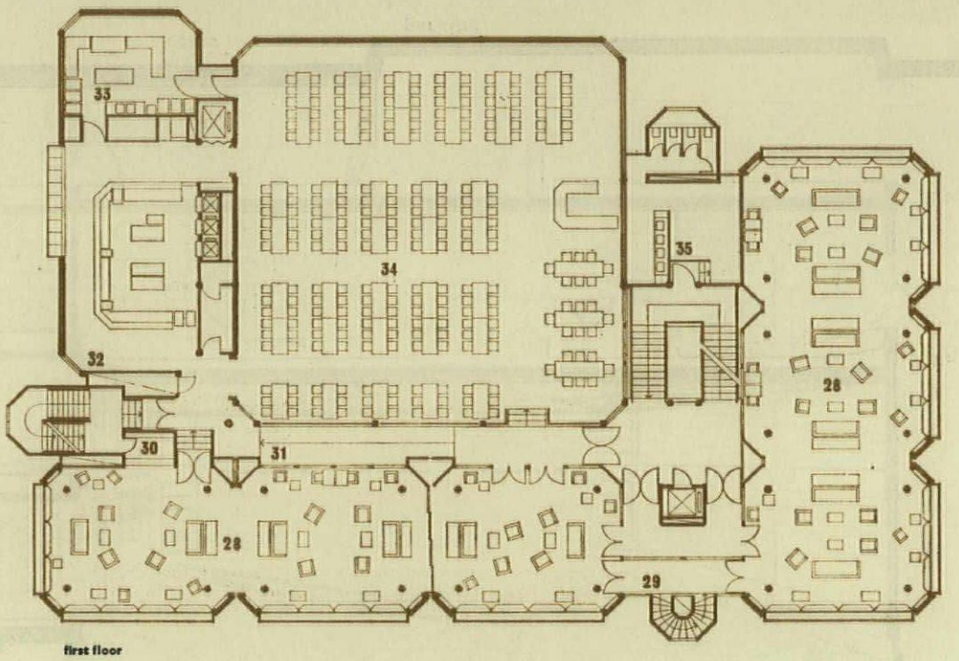
The bays into which the common-rooms are sub-divided are vigorously—even perhaps rather restlessly—expressed externally, the windows themselves being outlined in lead. Again there is a logical and interesting contrast in colour between the dark grey of the in-situ concrete stair towers—very Japanese, but none the worse for that—and the lighter tone of the Portland stone cladding. These slabs of stone are clearly expressed as such, with feather edges and open joints revealing the structural frame behind, but this gives a somewhate harsh quality to the wall treatment; and the stainless steel bolts and washers with which the slabs are fixed have been ostentatiously exposed, creating a fussy pattern of dots over every facade. In fact the whole design suggests a curious contradiction: on the one hand an almost puritanical insistence that every element in the building must be the direct and inevitable outcome of the structural handling of the materials; on the other hand a wilful transformation of these elements into decorative form, which makes them appear more adventitious than they really are. J.M.R.



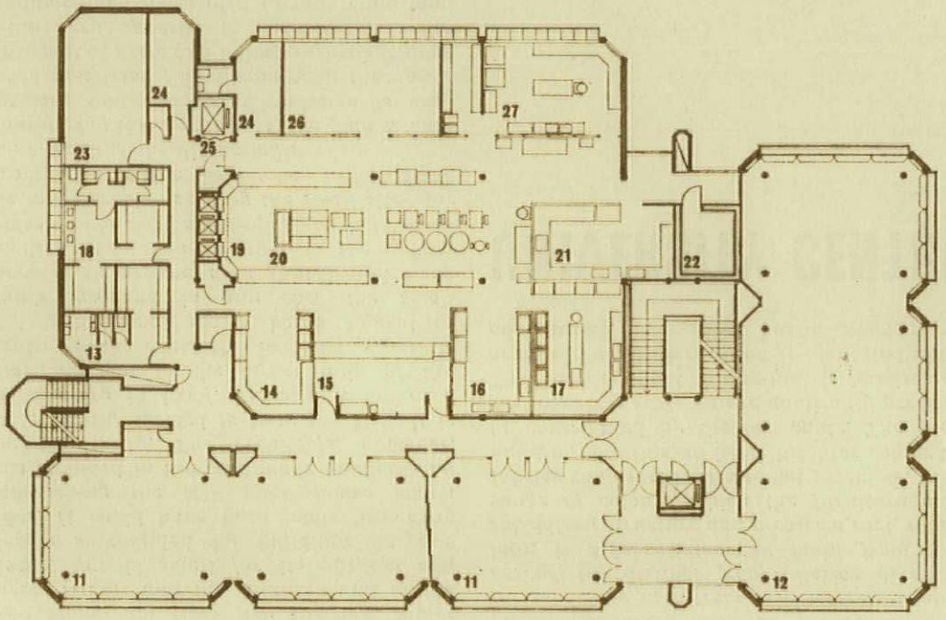
cross section



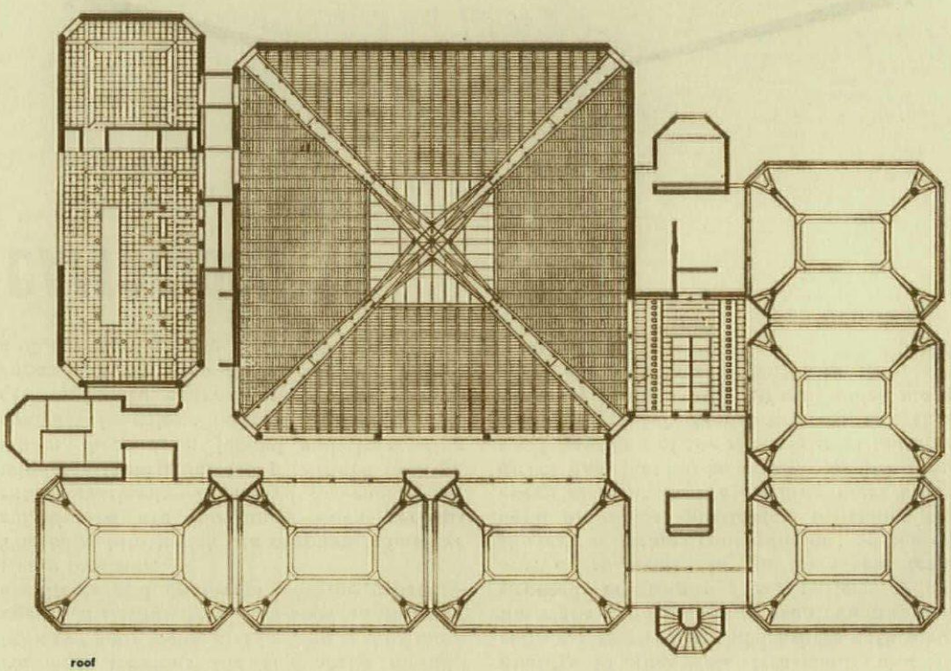
ground floor



first floor



second floor

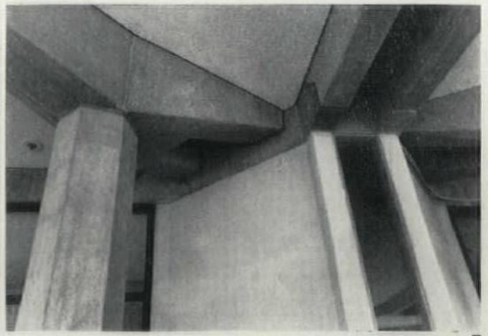


roof

key: *ground floor*: 1, snack bar. 2, billiards. 3, cloaks. 4, telephones. 5, offices. 6, table tennis. 7, delivery. 8, covered parking. 9, bicycles. 10, parking.
first floor: 11, small dining rooms. 12, common room. 13, men's cloaks. 14, wash-up. 15, servery. 16, pot-wash. 17, vegetables. 18, women's cloaks. 19, food lifts. 20, kitchen. 21, meat. 22, cold store. 23, store. 24, offices. 25, goods lift. 26, staff room. 27, pastry.
second floor: 28, common rooms, 29, escape balcony. 30, bar. 31, ramp up. 32, servery. 33, wash-up. 34, dining hall. 35, powder room.

UNIVERSITY CENTRE, CAMBRIDGE

6



7

6, inside one of the common-rooms which occupy the two main frontages on the upper floors, showing the sub-division into bays by the use of inset columns supporting an inner ring-beam. 7, the head of one of these columns, showing its haunched capital behind which is the warm-air aperture. The inner frame is in smooth grey concrete, seen against a white background. Ceilings are acoustic plaster. 8, in the ground-floor snack-bar, which has brick infill walls and a brick floor. 9, staircase hall at second floor level, looking into the double-height main dining-hall. The stair-carpet is lead.

8

9

UNIVERSITY CENTRE, CAMBRIDGE

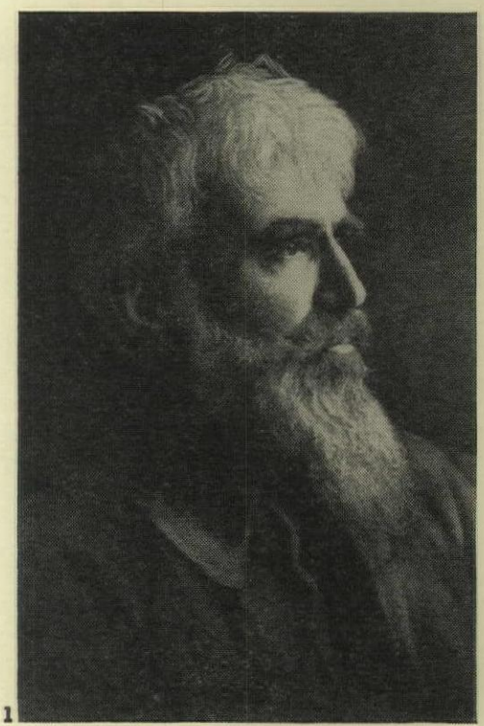
10, the exposed steel and timber roof-structure of the top-lit main dining-hall; it spans diagonally, giving a more even load distribution and a more even spread of light from fittings mounted on the roof members. Lighting otherwise is from table fittings. 11, looking down into the dining-hall from the gallery that serves the upper range of common-rooms. The concrete frame is filled with precast blocks having a limestone aggregate.

10

11

Janet Leeper

The work of the Swiss theatrical designer and reformer Adolphe Appia (1862-1928) is too little known in this country, and is appropriately recalled here at the conclusion of the Victoria and Albert Museum's memorial exhibition on his British counterpart Gordon Craig. Below, portrait of Appia, drawn by Théodore Appia in 1924.



1

In England, now so preoccupied with theatrecraft, lighting, staging, decor, we seem to have a blind spot for the work of Adolphe Appia, 1, whose contributions to the art of the theatre and especially to the technical aspects of lighting and plastic staging are of the greatest importance; for it is more than forty years since his work was on view in London. A pioneer in his chosen field, his ideas have been assimilated and used by stage designers all over the world, often without acknowledgment. Nor was he given a free hand when he did commissioned work in the theatre, his ideas being so far ahead of his time.

Appia was born at Geneva in 1862, a French-speaking Swiss, and died there in 1928. The centenary of his birth was celebrated by the Theatre Foundation in Berne which bears his name, with a retrospective exhibition of more than a hundred of his designs, supplemented by photographs. It was shown at Berne, Florence, Venice, Geneva and in other cities. The Foundation also prepared a special edition of his complete works.

Although Appia is honoured in his native land and in America, only a few rare spirits in England give him his due or even know about him, apart from theatre technicians and lighting experts. But the grave beauty of his designs, and their simplicity, caused Gordon Craig to proclaim him 'the foremost stage-decorator of Europe' in a note added to the preface of the second impression of his famous book *On the Art of the Theatre* which had appeared in 1911. This was in 1912, when he discovered that Appia was still living. In enumerating the theatre-men in Europe who counted, he had inadvertently included Appia 'among the shades.' Two years later they were to meet at the International Theatre Exhibition at Zurich, when the work of Craig and Appia was shown in adjacent rooms, to the pleasure of both, and a warm friendship sprang up between them, in spite of Craig having practically no French and Appia no English. They both, however, spoke a little German and we are told they eked this out 'above all by drawing'—the *lingua franca* of artists.[1]

Appia came from Genevese stock and had a deeply musical and humanitarian background. His father, Dr. Paul Appia, was one of the two founders of the Red Cross and his mother, Anne Caroline Lassere, was also a native of Geneva. From them he inherited his good looks and robust constitution. His early years were spent on the shores of the lake, at school at Vevey and at Geneva itself, where his parents lived and where he pursued his musical studies at the Conservatoire, going later to Zurich, Leipzig, Paris and Dresden before discovering his true path. Gifted as a musician, he came to the theatre comparatively late. But it was his sharp disappointment with what he saw in the theatre as opposed to what he had imagined with his mind's eye which was to determine his life and work.

The opening of the Grand Théâtre at Geneva in 1879, a building modelled on the Paris Opera House and considered the best in Switzerland, was to prove an occasion of bitter disillusionment to the young musician who found the acting, lighting and staging quite deplorable. Innocent of all sophistication, his approach to the theatre was through music and poetry, and the conflict between what he had imagined and what he saw—actors making sterotyped gestures before conventional painted scenery—struck him as not only inadequate but absurd. The opera

[1] *Edward Gordon Craig*. By Denis Bablet. Translated by Daphne Woodward. Heinemann, 1966, p. 175.

APPIA

APPIA

2

3

2, 'Die Walküre' Act III: The Rock of the Valkyries, 1892. 3, 'Parsifal' Act I: The Sacred Forest, 1896.

was Gounod's *Faust*, itself a long distance from the spirit of the original poem, but worse was to come. The young would-be musician had become a great enthusiast for Wagner's music-dramas, which he felt to be 'the art of the future.' Here, at last, he thought, music and text were inextricably interwoven, supporting one another and providing a rich feast for those who, like himself, longed for a *Gesamtkunstwerk*, an integrated work of art in the theatre. He had imagined it all, as it ought to be.

The first Bayreuth Festival had taken place three years earlier in 1876, when the complete cycle of *The Ring* had been staged for the first time. Wagner was still alive, so with high hopes Appia set forth for Bayreuth in the summer of 1882 when the mystical music-drama of *Parsifal* was to be performed, also for the first time. In spite of what is said in Dickinson's *Theatre in a Changing Europe* (1937)—an admirable book in other respects—and in more recent American books,[2] Appia did not prepare himself 'by working with Wagner at Bayreuth' nor did he like what he saw on the stage there at all. The newly-built *Festspielhaus* with its wonderful acoustics and invisible orchestra excited his liveliest admiration, for the lovely music seemed to 'come from the scene,' as Wagner intended. But the rigid conventional staging was in his view not only lamentable but prevented a proper appreciation of the music.

In fairness to Wagner, it must be said that he was himself very far from satisfied with the staging of his operas. He was a prisoner of the dead conventions of his time, and seems to have expected that his explicit stage directions would automatically yield the results he wanted—as in music—which, of course, did not happen. Cosima noted in her journal—as revealed in 1951 by her grandson Wieland Wagner—that in a petulant mood Wagner once exclaimed:

'When I think that a character such as Kundry will be dressed up, as at a carnival, I am reminded of those "artists" fêtes and their indecencies. I have created the invisible orchestra, if I could only now invent the invisible stage!'[3]

At Bayreuth are carefully preserved models of the stage scenery of the 'gas-lit era,' so much praised nowadays, including one of the Magic Garden in *Parsifal* seen by Appia in 1882. All that can be said is that it is rather less bad than those which followed it. Appia went again to Bayreuth in 1886 for *Tristan und Isolde*, a work which he passionately admired, and again in 1888 for *Die Meistersinger*, but this was after Wagner's death, when the so-called 'Bayreuth Tradition' invented by Cosima prevented any fresh thinking and the rigid conventionality became even worse. Visits to Dresden, Paris and Vienna only confirmed Appia's conviction that a radical reform of scenic architecture and lighting was necessary. Wagner, writing to King Ludwig in 1864 had said: 'I want only a subdued background to characterize a dramatic situation,' but all he had seen had differed from Wagner's directions. He thereupon decided to devote his life to these reforms.

His first step was to go to Dresden as an apprentice to the Court Opera House in order to study the technical aspects of lighting and staging, and the following year to work at both the Hofoper and the Burgtheater in Vienna, then the most famous theatres in Central Europe. In 1891, after seeing *The Ring* produced in Dresden, which greatly disappointed him, Appia returned to the Lake of Geneva, to the Castle of Glérolles near Rivaz, and that autumn wrote his first comments on how *The Ring* ought to be staged. He also made working drawings and production notes for the *mise en scène* for many other operas and dramatic works.

Appia's original *Notes de Mise en Scène pour L'Anneau de Nibelungen* (1891–1892), preserved by the Appia Institute founded after his death, have now been published with a Foreword by M. André Veinstein with his working drawings.[4] These notes differ from those published on *The Ring* in his first book three years later, but already his ideas are extraordinarily detailed and practical. He writes of his ignorance of back-stage at Bayreuth but takes as his basis Wagner's stage directions, libretto and score and the *Festspielhaus* as the theatre in view. He has advanced ideas on theatre architecture and audience-participation. He feels some method should be worked out for defining the 'choreography.' He records that he has had practically no help from seeing the performances at Dresden and Vienna. Two reforms appear absolutely necessary to him: that of lighting following the libretto and the score, achieved by proper placing and use of light, thereby fulfilling its most important function—the creation of atmosphere—and that of the décor itself, which should be neutral—the acting space of different levels being architectural or constructed rather than painted and capable of responding to imaginative lighting and plastic staging. He realizes that there would be great opposition to these reforms from the singers. He writes of the extreme fatigue occasioned in the public by looking at a stage without shadows, every object lighted from three or four angles at once, and the three-dimensional actors moving in a two-dimensional unreal world of flat painted surfaces.

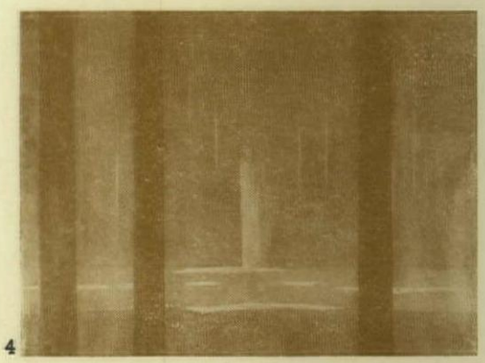
M. Veinstein informs us that, in addition to these notes, there are comprehensive directions (as yet unpublished) dating from this time for producing *Meistersinger*, *Parsifal*, *Lohengrin*, as well as *Prometheus* (of Aeschylus), *Macbeth*, *Manfred* (Byron's poem with Schumann's incidental music) and *Iphigenie en Tauride* (of Gluck). They are at the Musée d'Art et d'Histoire at Geneva.

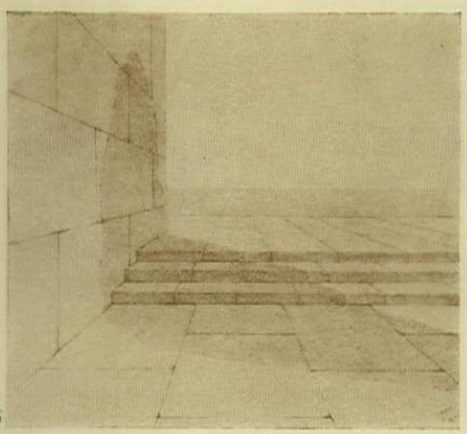
Appia thus appears as the first great theoretician of the modern theatre. When in 1895 he published *La Mise en Scène du Drame Wagnerien* it caused little stir,

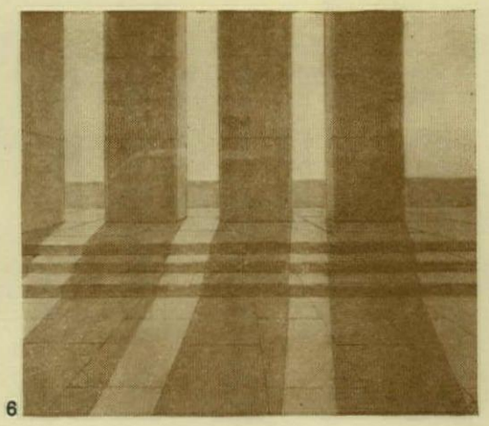
[2] For instance, *History of the Theatre*. By George Freedley and John A Reeves. Crown Publishers, New York, 1941 p. 419.

[3] The Bayreuth Festival: *Spectator*, August 7, 1953, p. 148.

[4] *Revue d'Histoire du Théâtre*. Les Presses Littéraires de, France. 6e année I-II, 1954, pp. 46–59.







Espaces Rythmiques, 1909: 4, The Glade. 5, Shadow of the Cypress. 6, setting for Jaques-Dalcroze School dancers.

but when in 1899 a second book, *La Musique et la Mise en Scène*, was translated into German and published in Munich. with eighteen designs, 2, and an annexe on producing and lighting *Tristan und Isolde* (1899), 3, he began slowly to gather disciples. His first chance to put his ideas into practice came in March, 1903, when he was invited to produce some scenes in a private theatre in Paris for the Comtesse de Béarn. It was to be a musical occasion and at first *Tristan* was suggested, with Weingartner conducting. Eventually three performances were given of two works: Act 2 Scene 1 of Bizet's *Carmen* and the Vision of Astarte from Byron-Schumann's *Manfred*. As the latter employs a chorus and uses atmospheric background music at times, it is easy to see why it attracted Appia. Schumann himself confessed 'I never devoted myself to any composition with such lavish love and power as to *Manfred*,' but it is seldom heard or performed nowadays.

For *Manfred* Appia planned a scene rising in steps from left to right, occupying the whole width of the stage, ornamented with sumptuous purple pillars. In other words it was a constructed scene and not a painted one, in which the lighting was to do the work, with the music; the actors, placed in a three-dimensional setting, could form plastic groups and be part of the scene. Just about this time Mariano Fortuny in Italy was perfecting his apparatus for diffusing light from reflected surfaces through stretched silk, using the half-dome or *Kuppelhorizont* which the Germans were to make such good use of in the years that followed. Gordon Craig, with his practical approach to stage matters, had already shown the way in London in 1900 with his wonderful lighting for Purcell's *Dido and Aeneas*, so much praised by W. B. Yeats at the time,[5] and we get the following comment on Appia from Yeats in his theatrical journal *Samhain* (1904):

'M. Appia and M. Fortuni are making experiments in the staging of Wagner for a private theatre in Paris, but I cannot understand what M. Appia is doing, from the little I have seen of his writing, excepting that the floor of the stage will be uneven like the ground, and that at moments the lights and shadows of green boughs will fall over the player that the stage may show a man wandering through a wood and not a wood with a man in the middle of it.'[6]

In *L'Oeuvre d'Art Vivant* (Edition Atar, Paris, Geneva, 1921), Appia shows a glade in a forest, 4, in which everything is done by light and shadow, there being no trees; and the famous design of three steps with a cypress tree's shadow falling across them, 5, the tree itself being absent. Both date from 1909. He says that he began with a whole row of cypresses, then took them away one by one until he was left with a single shadow, because it was *sufficient*. Nothing could better illustrate Appia's constant effort to eliminate everything unnecessary; but to achieve an open-air effect the diffused lighting is absolutely essential; it is part and parcel of his technique for suggesting natural light.

Reports of the private performances in Paris were carried abroad by Count Keyserling, who was present, and by Gustav Mahler and Alfred Roller from Vienna. They may have also reached the ears of Emile Jaques-Dalcroze, Appia's compatriot, who had opened a private school in Geneva for teaching rhythmic movement at the end of the year, but of this there is no evidence. Dalcroze, who was three years younger than Appia, had at an early age been musical director of a theatre in Algiers, where he had become interested in drum rhythms and popular Arab music. Later he was appointed Professor of Harmony at the Geneva Conservatoire, but though a voluminous composer, writing operas, choral works, string quartets and songs, he became dissatisfied with a purely musical career and started a voluntary experimental class for movement, intended at first for conductors and singers, but soon extended to others. He was an engaging personality and a born teacher but *'la Méthode Rythmique*,' later to be called Eurhythmics, remained a private venture, for in spite of the enthusiasm of his pupils the Conservatoire would have none of it.

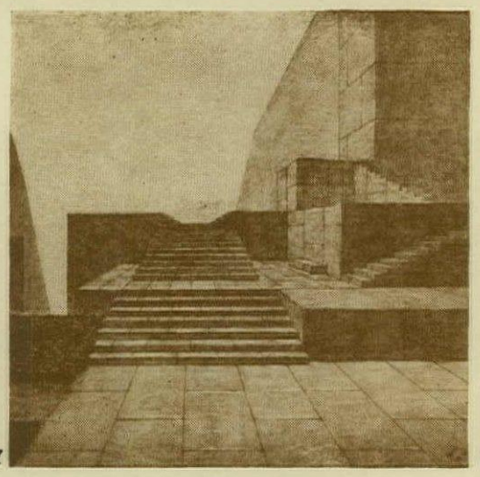
Appia does not seem to have come into contact with him till 1905, after Dalcroze's successful student demonstrations at the Solothurn Music Festival, but each found in the other a kindred spirit. Indeed as early as 1895, Appia had thought that some kind of '*gymnastique musicale*' must be worked out to train the actors to move rhythmically. He therefore enthusiastically began to design scenes for the mime and dance episodes Dalcroze was composing for his pupils to perform, and Dalcroze took on the ideas of built-up units and plastic staging, and diffused and mobile lighting through draperies, from Appia.

From this collaboration, date all the splendid designs made by Appia under the generic title '*Espaces rythmiques*,' 4–7. They are the last word in balance and proportion and are often used without acknowledgment for abstract ballets and symbolic staging by others, the most recent being seen in London in September, 1965, when the Winnipeg Ballet performed their prize-winning *Aimez-vous Bach?* with its impressive 'surprise ending' which proved to be pure Appia. Nearly all are dated 1909 or 1910. Only three designs were made specifically for a dance libretto by Dalcroze for his students to perform, on the subject of Prometheus, but even these were not realized in the then modest conditions of the Dalcroze School. (They are not to be confused with the 'Prometheus' of Aeschylus which was performed at the Basel Stadttheater with Appia's settings in 1925.)

The early Prometheus designs are described by Appia himself as 'poised between the necessary romanticism of Wagner and the full liberation afterwards.' They were much admired by Sir Claude Phillips, the art historian, when they were shown in London at the great International Theatre

[5] *Ideas of Good and Evil*. By W. B. Yeats, p. 152.
[6] W. B. Yeats: *Collected Works* (1908), volume IV, p. 183.

APPIA



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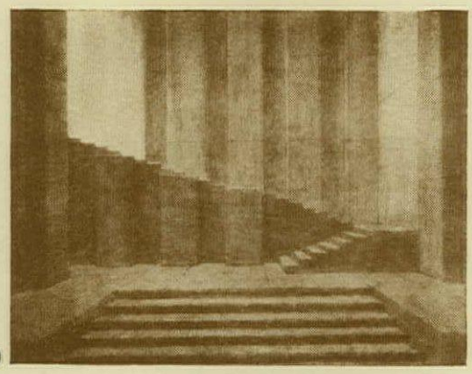

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7, Espaces Rythmiques: Schiller, The Diver, 1909-10. 10, 'Orfeo': Descent into the Underworld, 1912/1926.

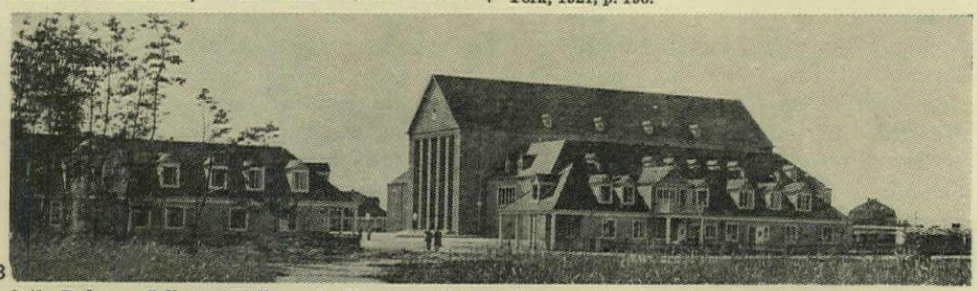
Exhibition of 1922 which had been staged at Amsterdam earlier that year and brought to the Victoria and Albert Museum in June, largely owing to the efforts of Gordon Craig and the British Drama League. In a long signed article on this important exhibition Phillips wrote:

'Quite apart stands M. Adolphe Appia a Swiss (?) artist whose stage settings, mainly for operas and classic plays are of unsurpassed dignity. . . . The reduction to great juxtaposed piles of naked masonry, so daring in its simplicity—especially in the settings for *The Valkyrie* and *Prometheus* —is free nevertheless from all cubist affectation. . . . Another impressive design by the same master is *The Dungeon of Klingsor* for Act II of *Parsifal*. The finest conceptions of all, because they are the most individual in their grandeur, are however "The Workshop of Prometheus" and "The Workshop Destroyed".'

Among all the projects at Geneva which remained only projects came one great realization of a practical kind. This was the founding in 1911 of the Dalcroze *Bildungsanstalt* or College at Hellerau, a garden suburb near Dresden, by a patron of the arts Wolf Dohrn, of Polish-German descent, and his brother Harald, so that Dalcroze and Appia might put their revolutionary ideas into practice. The *Bildungsanstalt*, an interesting complex of buildings designed by the architect Tessenow, 8, incorporated Appia's ideas for lighting and performance in a wonderfully lit central Great Hall, 9, where the acting area was not defined by a stage, but constructed of units permitting plastic staging. Appia had always felt that the performers and the audience should be one, that the acting area should not be separated from the body of the hall, thereby anticipating the ideas of today. He wanted, he said, a great empty room, with a vault for housing the lighting apparatus. He therefore planned an acting area which could be used both by the dancers and the audience and lit in a variety of ways. With the Russian painter Alexander Salzmann he designed ingenious 'mobile' units from which different levels and a whole series of connecting steps could be constructed, while strips of linen lined the walls and behind were batteries of lights ingeniously arranged in different circuits for different effects.

'Both the audience and the setting were illuminated by the same lambent and mysterious glow, proceeding from the translucent walls, around, behind and above them' wrote Kenneth MacGowan describing it in *The Theatre of Tomorrow*.[7] This kind of staging proved to be a revelation, when the scene between Orpheus and the Furies with Gluck's music was given by the pupils in the summer of 1912. There was no need for 'scenery.' Curtains and a gigantic flight of stairs leading to the underworld, 10, was the only decor, but the effect was overwhelming. Dame Marie Rambert, who has done more than anyone in England to foster choreographic talent, was then a member of the teaching staff of the College and has described the extraordinary effect of this scene upon her, and the lasting impression of Appia's 'setting,' so simple and yet so effective, exactly as portrayed in the design of 1926. She remembers also '*Echo et Narcisse*' a dance libretto with music composed by Dalcroze and choreography by Annie Beck, a gifted Dutch girl, which she saw at the school, 11. Later on it was elaborated and Appia describes how, when Narcissus looked down into the water, the five naiads grouped round the rock in a long chain mimed their pleasure at the

[7] *The Theatre of Tomorrow*. By Kenneth MacGowan. New York, 1921, p. 190.



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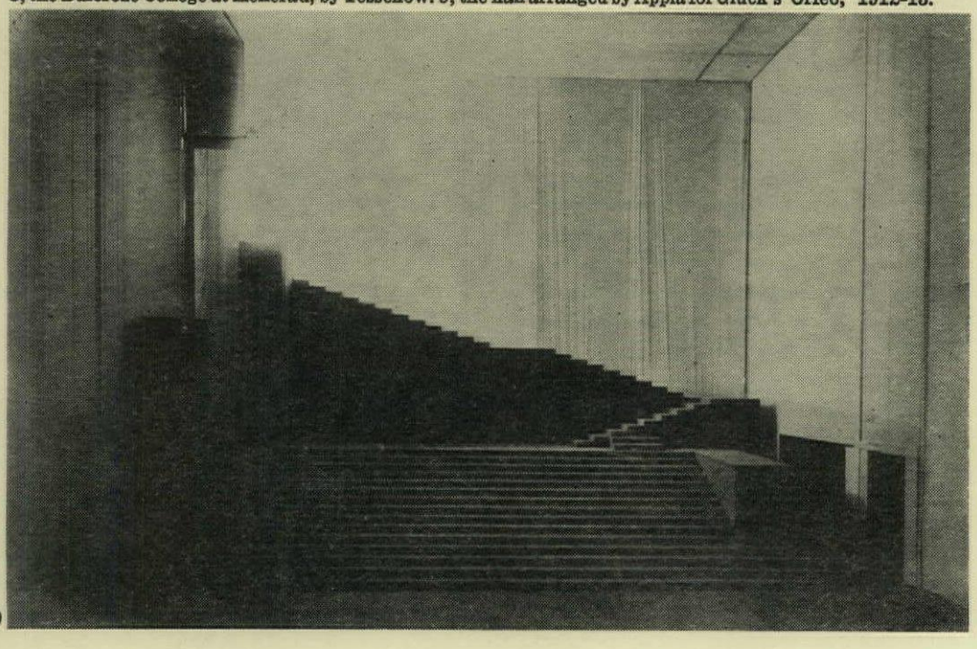
8, the Dalcroze College at Hellerau, by Tessenow. 9, the hall arranged by Appia for Gluck's 'Orfeo,' 1912-13.



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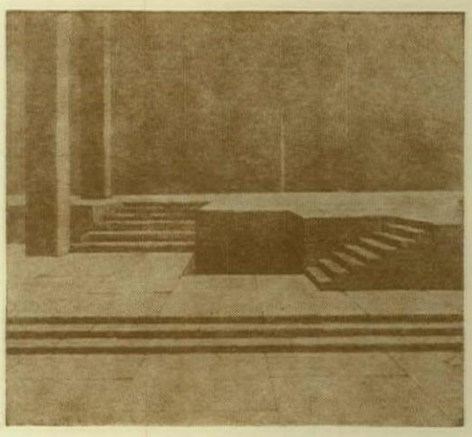

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12

11, 'Echo et Narcisse': dance libretto by Jaques-Dalcroze performed at the Jaques-Dalcroze Institute, Geneva, 1920. 12, 'Orfeo': The Elysian Fields, 1913/26.

reflection appearing, and everyone *saw* the water, though it was only a parquet floor. . . .

The following year (1913) the whole of Gluck's *Orpheus and Eurydice* was given, 12; but a visit to Hellerau by Diaghilev and Nijinsky, who had come out from Dresden when on tour earlier that year, had led to Dame Marie joining the Diaghilev Ballet in order to teach the *corps de ballet* the difficult rhythms of *Le Sacré du Printemps*, Stavinsky's new score. The College lost a valued teacher but classical ballet and eurhythmics were to join hands for the first time and with far-reaching results in the person of Dame Marie Rambert.

Beryl de Zoëte, the writer on dancing, was a pupil at the College at the time and recalls how Annie Beck who taught '*plastique animé*' trained the chorus of Furies and how fine the effect was. Of Appia she writes: 'He was a magnificent and very lovable man and I was overjoyed at being asked to visit him in his medieval tower below the vineyards on the edge of Lake Leman. He took an active part in the designing of Hellerau.' Of the plastic staging and the units that composed it she writes: 'These light and easily movable blocks and the long white curtains which the lighting transformed into a dense forest or a classical temple were used with magical effect in Glück's *Orpheus* and Claudel's *L'Annonce Faite à Marie*, which were performed at Hellerau in 1913 and attended by Bernard Shaw, Granville Barker and Claudel.'[8]

All this was to come to an end and all too soon: Wolf Dohrn was killed in a ski-ing accident and the outbreak of war brought the whole international project to a close. Jaques-Dalcroze transferred his activity to Geneva, where in time a new Central Training College arose, while the London School of Dalcroze Eurhythmics, founded in 1913, attracted new supporters in England.

As I have already said, it was in February, 1914, at an International Theatre Exhibition at Zurich, that Gordon Craig and Appia first met. Craig, who was already in Zurich, was at the station to meet him, and fortunately he recorded his impressions in his Daybook III:

Yesterday Appia and I had our first talk. It was *very good*, very enjoyable.
Today our second talk, and it was *exciting*.
He spoke much of Wagner and of Hellerau and Jaques-Dalcroze.
Yesterday—less today.
I let him talk—although I told him that for me the *human* body in movement seemed to signify less and less.
Today he spoke of Wagner and the Art of the Theatre. I had to say that Wagner hated the Theatre and used it as a Prostitute is used.
This made him divinely angry.
I tried to show him, without saying so, that he was searching for—for what I believe I have found—
The true and sole *Material* for the Art of the Theatre, *Light*—and through light *Movement*.
The veils of *music* and the *human form* made mist for his eyes and he could not see through.
I thought I caught him trying once or twice to push the veils aside, but he laughed on. . . .
A fine man—seeing very clearly—many things.
One weakness (his strength perhaps) that first he 'needed' Wagner to hang upon—now he 'needs' Dalcroze.
Last night he saw the marionettes here (he says for the first time), and was amazed.
Well then—let's believe that they will lead him somewhere away from Dalcroze and Wagner. . . .
Appia's laughing and strong disagreement with me on these points—how bracing it is—I have not been so braced for years. And what a fine fellow he is—a funny fat little body—a fine built head—built up also by hair and beard and a strong and vivid eye. The only *Man* I have yet met in the world around the theatre—for he is not quite in it, he flutters round it—rightly he fears the unrest which entering the theatre would bring him—but he fears and therein is he weaker if wiser than our old stage carpenter who descends into Hell and is unharmed.'[9]

Appia indeed feared the fever of the theatrical life and later he was to meet it with disastrous results. He cherished his friendship with Craig and their correspondence shows how great was their respect for each other. An ill-considered article by Carl van Vechten in an American magazine[10] accusing Craig of plagiarising Appia did nothing to spoil their friendship.

On November 23, 1915, Craig wrote to Appia from Florence:

Dear Appia
A sweet spirit of a man in America has just written an article—so sweet—to say that (no—not to *say* but to insinuate that) I could not have written my poor book unless I had first read your books, and that all my ideas are STOLEN from you.
Poor you—poor me.
I am sure you have not read my book—and alas I have not read yours. I often hold it, and pat it, but German I cannot read nor French nor even Italian.
Tell me! What should be done to this American (and his kind) who tries to (what is called in England) 'play off' one friend against another in public.
He should have some big prize—but what?
Still our names look very charming together on the top of the page.

Votre
Craig
Toujours[11]

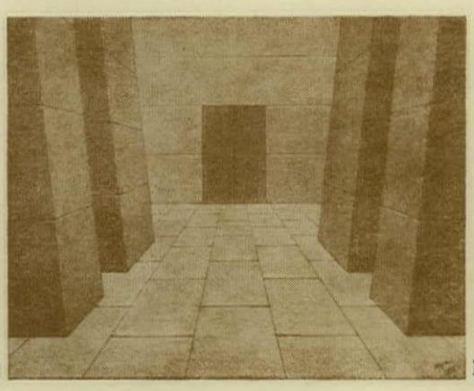
Later we find him writing from Via Margutta in Rome to Appia on February 22, 1917:

. . . You, my dear, are the very noblest expression in the modern theatre—*to me* you are: and I say that without any needless bowing of the knee. And to me there is far more vivid life and drama in one of your great studies for scenes than in anything else known to me in our threatre of Europe. There are other rather wonderful powers in a few men and women—but none *speak* as your designs do.
None speak *just so*. . . .[12]

To which Appia replied from his Tower at Glérolles on May 26, 1917:

. . . *tout ce que vous m'écrivez m'intéresse et me charme*. . . .
Et je suis bienheureux *que vous avez mes* Champs Elysées[13] *pour rester, intimement, hors de tout snobisme, tout, tout près de vous, Craig.*
. . . *Au fond de l'âme nous avons* la même vibration et le même désir; *seulement exprimés d'une façon différente, de par nos tempéraments différents et de par nos situations très différentes. Qui importe! Nous sommes, a jamais, ensembls. Cela suffit.*[14]

[8] See *The Thunder and the Freshness*. By Beryl de Zoëte. Neville Spearman, 1963, pp. 20–21.
[9] See *Edward Gordon Craig*. By Denis Bablet. Translated by Daphne Woodward. Heinemann, 1966, pp. 175–6.
[10] See *The Forum*, New York, volume 54, October, 1915, pp. 483–487.
[11] Original at Appia Foundation (Collection Suisse du Théâtre, Berne).
[12] See *Edward Gordon Craig*. By Denis Bablet, p. 177. Original at Appia Foundation, Collection Suisse du Théâtre, Berne.
[13] This celebrated design for Gluck's *Orfeo* at Hellerau is here reproduced from a copy made by Appia in 1926.
[14] From the Gordon Craig Collection, Bibliothèque de l'Arsenal, Paris.



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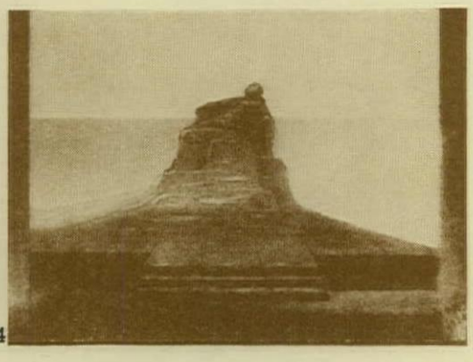

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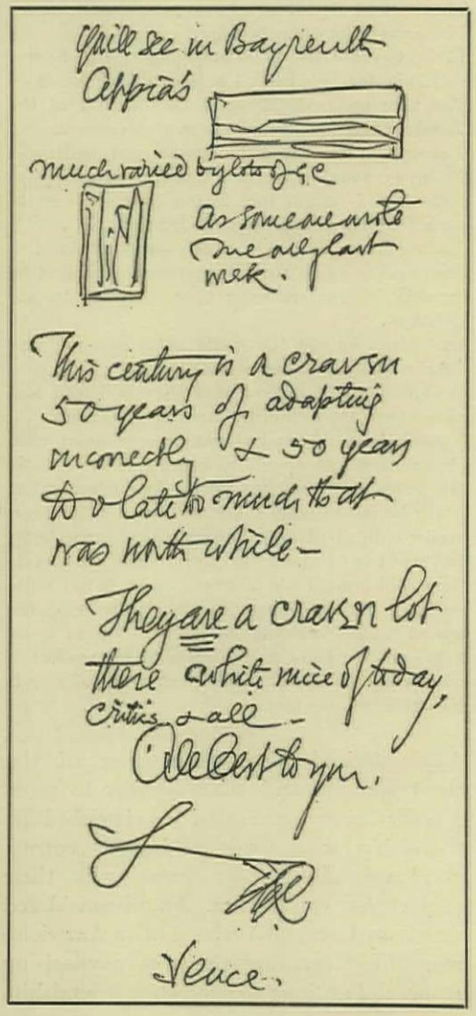
13, 'King Lear' Act I, 1926. 14, 'Prometheus,' 1924. Performed at Basel Stadttheater, 1925.

It is sad to relate that when at length Appia was invited to design and produce an opera in 1923 it was a failure, as he was unable to get the results he wanted. Mr. Craig once told me he believed that every large opera house breeds a special kind of electrician-engineer who reigns over the apparatus under his control like a petty monarch. *He knows best.* Woe betide any theatre artist who tries to do something new, or unknown to this technician! He has it in his power to wreck the performance, and rather than budge an inch from his own limited point of view, he will.

Appia's first brush with this omnipotent individual was at *La Scala* in Milan, and the opera was *Tristan und Isolde*, a work for which he had prepared a detailed and beautiful scenario twenty-four years earlier, which is still valid and has been much admired by Wagnerites. But as Mr. Craig told me, he utterly failed to get it carried out in spite of Toscanini watching over the production and defending it. It was the same story with *The Ring*. The Stadttheater at Basel commissioned him to design the whole work, but only *Das Rheingold* and *Die Walküre* were performed, owing to the opposition of the President of the Swiss Foundation for the Bayreuth Festival, and the rest was abandoned with mutual dissatisfaction all round. He came to battling with the powers-that-be too late to master them, and the period 1923–25 was one of great frustration. Meanwhile he went on designing: *Hamlet*, *King Lear*, 13, *Macbeth* and a Grillparzer play *The Waves of the Sea and of Love* occupied him in the 'twenties as well as *Little Eyolf* of Ibsen and Goethe's *Faust*, to say nothing of *Oedipus Rex* of Sophocles and *Prometheus* of Aeschylus, 14. The last play was performed at Basel in 1925 three years before his death, the only one of this long list of great plays to reach the theatre boards. Four dark curtains descended over the stage to hint at the surge of the billows after Prometheus's last words. It was Appia's swan-song. Some of the designs of this period show curtains or screens as well as great blocks of masonry, but all show his dedicated and beautiful sense of design.

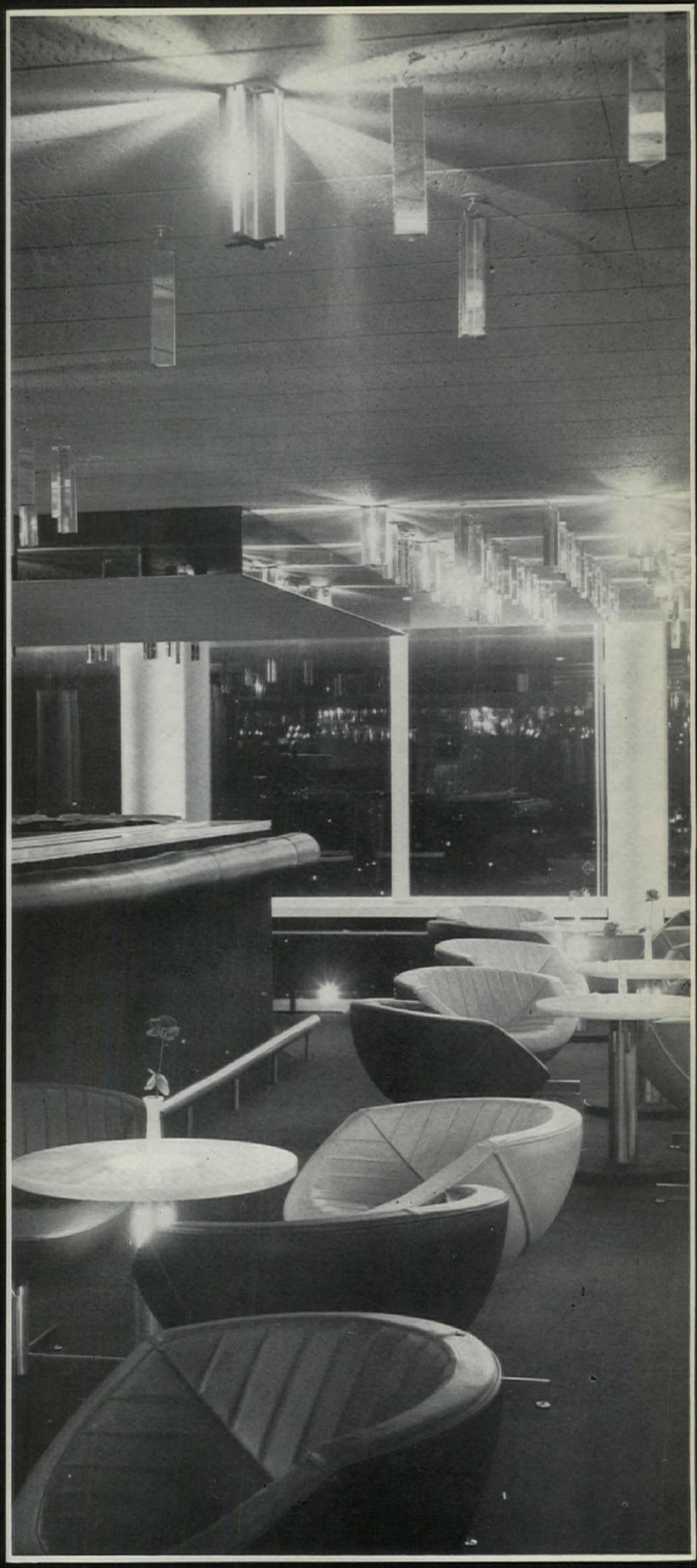
When Wieland Wagner renewed control of the Bayreuth *Festspielhaus* after the last war, a great change was observed and it was noised abroad (incorrectly as it proved) that Appia's ideas were at last being put into practice by Wagner's grandson. Curious to see if this was so, I went to Bayreuth in July, 1953, and wrote a full description to Mr. Craig who replied characteristically, and his must be the last word:



ID
INTERIOR DESIGN

CONTENTS

In an age when the client's needs are becoming more and more specialized (for example the Lancaster's extensive exhibition areas designed for international conferences), it makes little sense to design a conventional structure before knowing how it is going to be used. Speculative development might succeed if it were possible to put up a type of structure which allowed infinite degrees of flexibility within it, but the speculative design of the Lancaster Hotel determined the position of staircases and lifts, and such variable dimensions as ceiling and window cill heights, well before the Rank Organization came to the scene as clients. As many floors as possible were crammed into the overall height of the building and full air-conditioning was only introduced subsequently, reducing the ceiling heights even more. This may not matter much in the bedrooms but it has seriously affected the quality of space in the public areas with which the following pages are concerned. For example the site has the finest views over Kensington Gardens, which the fixed cill heights made it almost impossible to exploit. The Rank Organization took over the building early in 1966 when the structure was nearly completed and in July commissioned Cassidy, Farrington and Dennys to act as co-ordinating architects for the interior. Work started in January 1967 and the hotel opened on August 1, even though the completion date was not until October. This remarkable feat was made possible by a client who knew what he wanted and by an exceptionally efficient design organization. Cassidy, Farrington and Dennys invited other architects to design the main areas and with admirable restraint kept the least interesting parts for themselves. It is to their credit that some of the interiors rise above average standards of design despite the severe limitations within which they were forced to work.
The three interiors that were thought most interesting and successful are illustrated here, followed by the exhibition and conference areas which introduce a technical article on sliding partitions.



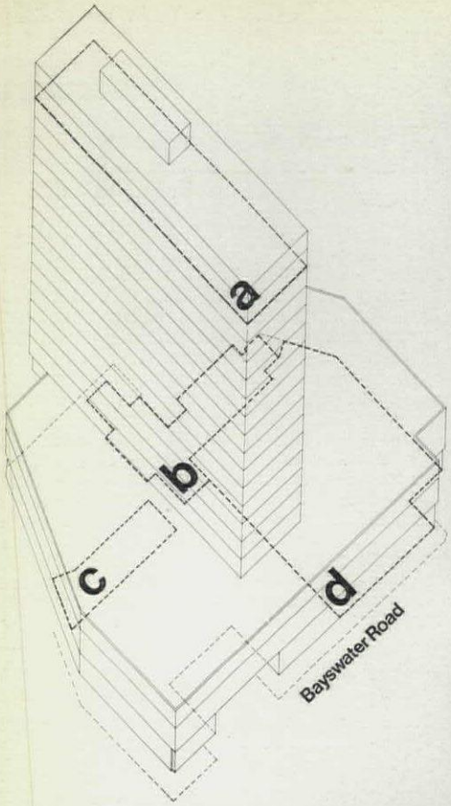


diagram of Royal Lancaster Hotel showing areas illustrated: a, Looking Glass Restaurant. b, entrance and reception area. c, private function rooms. d, Nine Kings banquet area with Westbourne Suite below

Royal Lancaster Hotel Looking Glass Restaurant

Architects: Leonard Manasseh & Partners

This restaurant has a commanding position on the top floor of the hotel. The architects were also asked to provide a small dance floor and a bar. One third of the restaurant can be shut off for private functions or merely to avoid an empty look when it is not full.
The importance of the bar is evident both in its size and in its position on the Bayswater Road side, with a view over the Italian garden and the Serpentine. Unfortunately half this side is blocked by an escape stair. Nothing could be done about this, but the interior architects were brought in just in time to have all the services gathered together and kept away from the outside walls.
Also irrevocable was the level of the window cill which was high enough to obstruct the view. The architects therefore built the bar on a platform, but in doing so have raised the floor level uncomfortably close to the ceiling. The position of the bar at one end means that one has to skirt very close to the dining tables and dance floor to get there. This could be a serious nuisance to those dining in the much more exclusive restaurant. It is difficult to see how this could have been avoided, given the position of the lift shaft and the inevitable placing of the kitchens at the north end. The decoration and furnishing is both rich and restrained. Reflecting surfaces of black mirror on the vertical ducts and lift shaft dissolve these obstructive elements. The dark green carpet and matching leather upholstery introduce a note of intimacy which is badly needed in a room with continuous windows on

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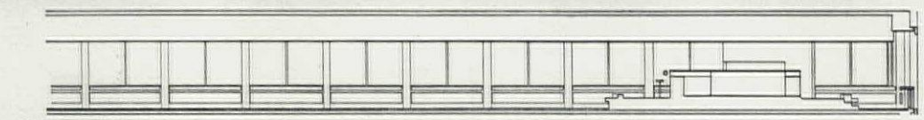

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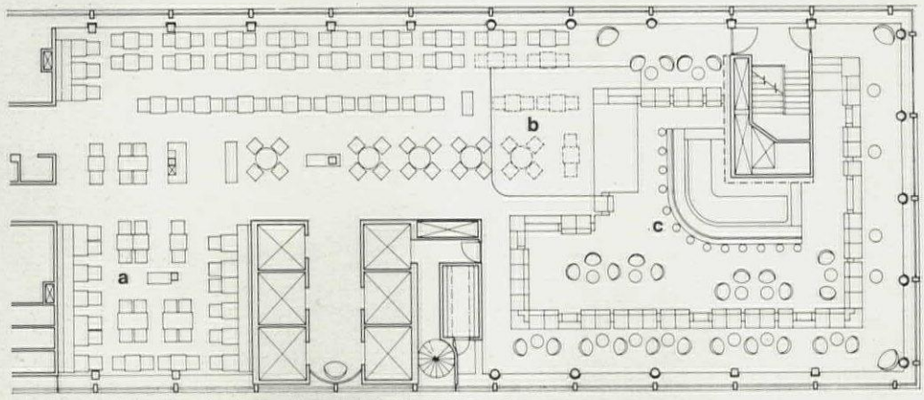
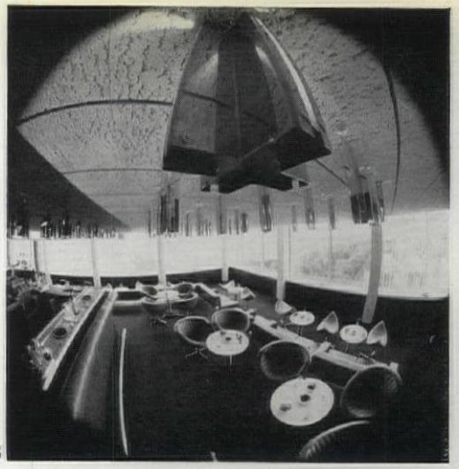


plan of Looking Glass Restaurant: key a, area which can be shut off. **b,** dance floor. **c,** bar

1 (previous page), the raised bar area at night. 2, the bar reflected in the black mirror at the lift-shaft end of the bar area.



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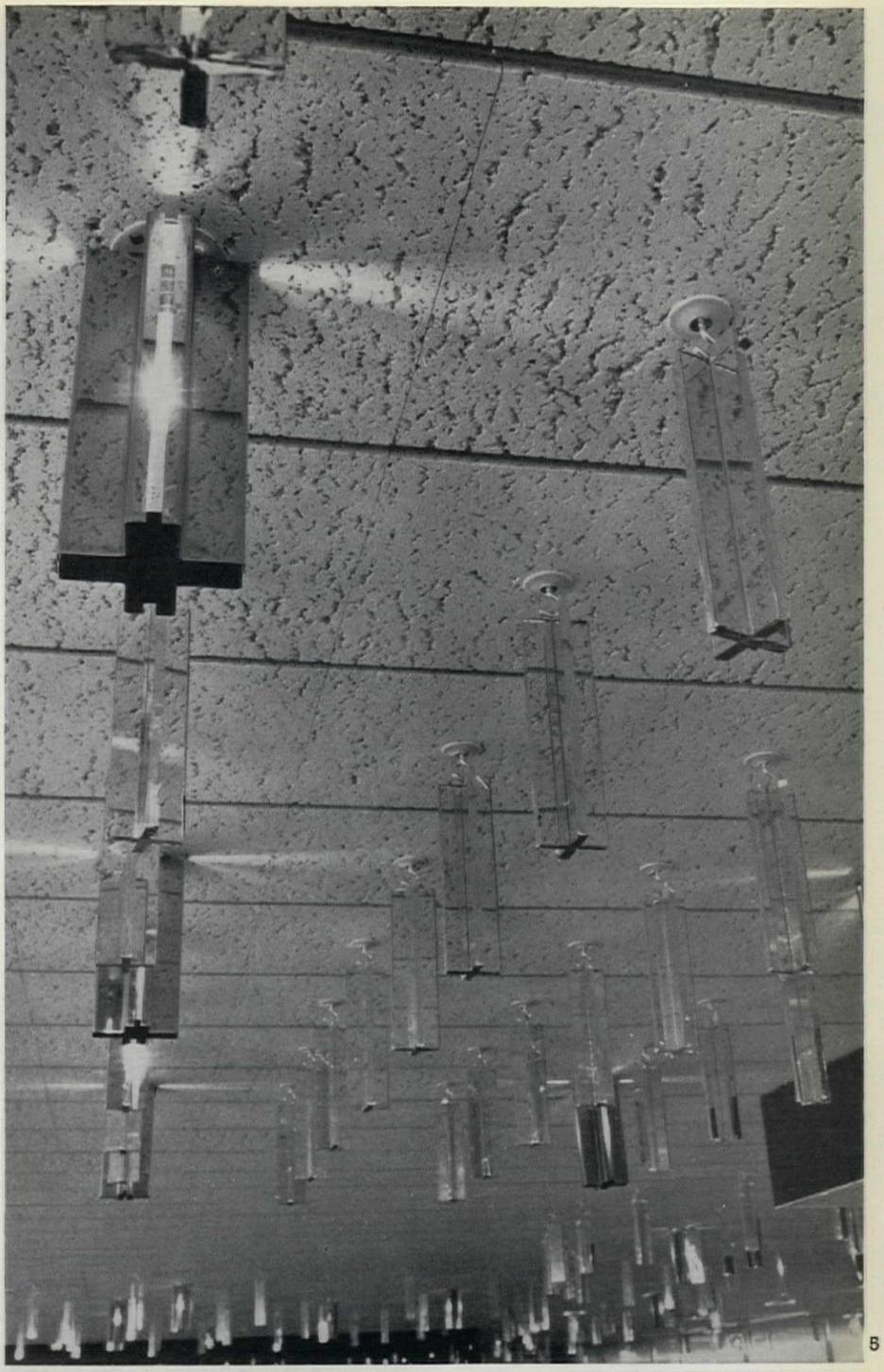
3, fish-eye view of the bar (see also the cover). 4, the bar by day from the same viewpoint as 1 and 3. 5, the acoustic ceiling with hanging glass prisms, some of which are lights and some only reflectors. 6, the restaurant.

three sides. The overall dark tone is livened up by some orange leather upholstery, by white marble table tops in the bar area and, rather more questionably, by an abstract design in shocking pink over the ceiling, which is supposed to express the pattern of circulation within the room. The acoustic tile ceiling, which is standard throughout the hotel, is the one serious miscalculation. It is a cheap-looking material and not sufficiently negative to be ignored in the company of leather, marble and mirror. The Looking Glass Restaurant comes into its own at night when the window-glass blends with the black mirror to form a continuous reflecting surface and when the ceiling retreats behind the glitter of hanging glass prisms. Unfortunately these had to be reduced in number for economy and the brilliant effect that might have been achieved is only hinted at. At night the high window cill also matters less because reflections mix with the view and the whole window-wall becomes a back-drop to the room.

All the bar furniture was designed by the architects. For the sofa seats they could not afford coiled spring construction with a soft top and so used hard Latex foam to prevent the leather from creasing, with some sacrifice of comfort. The same is true of the delightful swivel chairs with their low backs. Looks were considered to be more important in a chair that will never be used for long and undoubtedly a high back would have obstructed the view.



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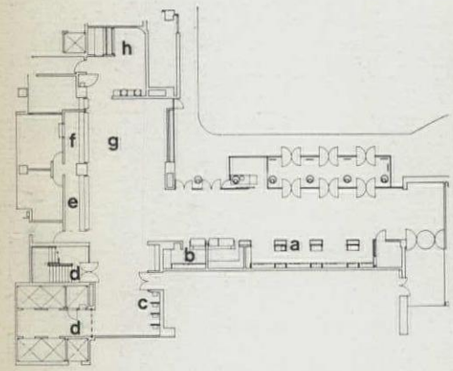
Royal Lancaster Hotel: Entrance and reception area

Architects: Gordon Bowyer & Partners in association with Keith Townend

Entering the mean and confusing entrance of the Lancaster Hotel makes one yearn for *beaux-arts* axial symmetry; but neither the tortuous circulation nor the lack of any sequence of related spaces between entrances and lounges (situated remotely on the first floor) is the fault of the architects. These serious failings are the result of a client's needs having to be fitted into an existing structure. The entrance is shallow and made to appear even shallower by the presence of a shopping area with display cases. These cases hang on a series of piers and are glazed on three sides, making the display the most conspicuous feature. This would be perfectly logical if a high standard of window dressing could be guaranteed; but in a country where this standard is regrettably low, it might have been preferable to design the cases more strongly at the expense of the display inside. After entering, the visitor is faced with the possibility of turning left or



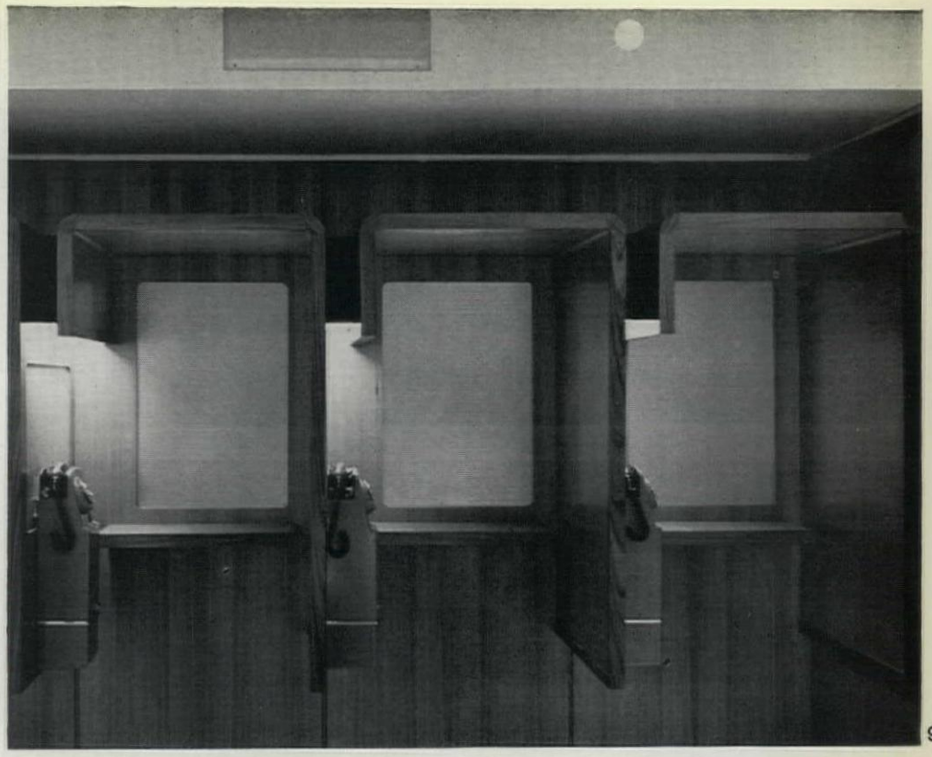
plan of entrance and reception area: key a, shops and display. b, porter. c, telephones. d, staircase and lifts. e, reception. f, accounts. g, waiting area. h bar.

right. Left would lead him to the private conference and exhibition areas, and it is only a series of signs, rather high up and difficult to read against the rough acoustic plaster, that point to the reception desk on the right. He has to turn through another right angle to get to the bar, or, in the opposite direction, to the staircase and lifts. With licensing hours the bar is frequently closed, forming a dark and empty space at the end of the reception area. Though partly screened by low walls, it remains sufficiently a part of this area to affect it adversely. The bland exterior of the reception counter hides a remarkable computer which copes with all the billing, registering every charge against a guest's account and producing any bill within thirty seconds.
With the exception of the display cases, the architectural treatment of the spaces as a whole is simple and strong. A variety of uses—reception, cashier, switchboard, porter, telephones, waiting area and bar—are unified by means of features such as coved floors and ceilings, and by the consistent use of hard finishes and neutral colours such as honey-coloured terrazzo, filled Travertine and teak. The only soft surface is the white acoustic ceiling, and this is marred by the heavy profile of the air-conditioning outlets which seems out of character with the architects' detailing everywhere else. The sign 'Royal Lancaster' over the entrance was originally designed by the architects in Helvetica, and this bolder

7

8

type-face without serifs would have been more suitable for the outside of the building. The three illuminated signs cantilevered over the door that leads from the reception area to the stairs, are so close together that the front sign tends to mask the other two except from very close to. These signs are important as they point to the lounges and restaurants on the first floor.



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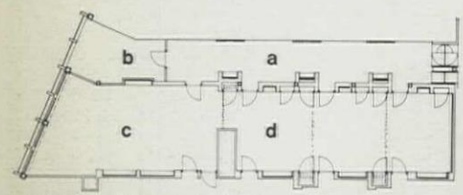
7, the entrance with shops and showcases on the left and the reception desk in the background. 8, the waiting area with the bar beyond. 9, telephone booths opposite the lift shafts. 10, the bar, looking towards the waiting area.

1

Royal Lancaster Hotel Private function rooms

Architect: Margaret Casson
Assistant: Roger Liminton

The private function rooms are on the first floor and occupy a deep and narrow area, most of which has to be lit artificially. The space has been designed so that it can be subdivided into two, three or four smaller rooms by means of partitions that slide and fold up into walls. There are facilities for film projection when the three inside rooms are used as one, and an adjoining kitchen makes it possible to hold small banquets and private dinner parties. The tables can be built up to almost any size or shape out of square and semi-circular units. The restricted space available has meant that no cloakrooms could be provided, though some coats can be left in the store. It has also resulted in a form of access which could lead to some confusion if several functions were starting at the same time.
The claustrophobia inherent in internal rooms has been counteracted most successfully by the use of bright colours. Mirrors fixed behind the recessed sideboards have also helped by making the rooms look larger. The Japanese Sen wood, stained orange, provides a lively contrast to the blue-green carpet and there is plenty of white in the vinyl wall panels and fibrous plaster ceiling.
The ceiling louvres are in a strong diagonal pattern which effectively breaks up the feeling of rectilinear containment.



plan of private function rooms: key a, access corridor. b, store. c, d, private function areas

11

Private function rooms : 11, small dining-room—the dividing partitions can be covered by curtains; the lighting can be dimmed and candles used. 12, the whole area prepared for a meeting. 13, the end area prepared for a reception.

12

13

Nine Kings banquet area

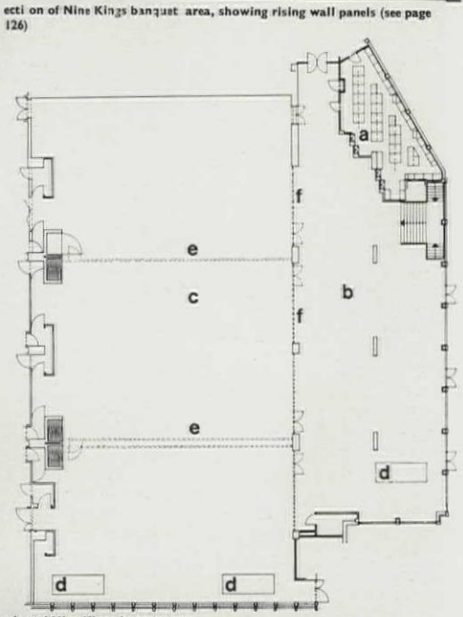
Architects: H T Cadbury-Brown & Partner

Westbourne Suite

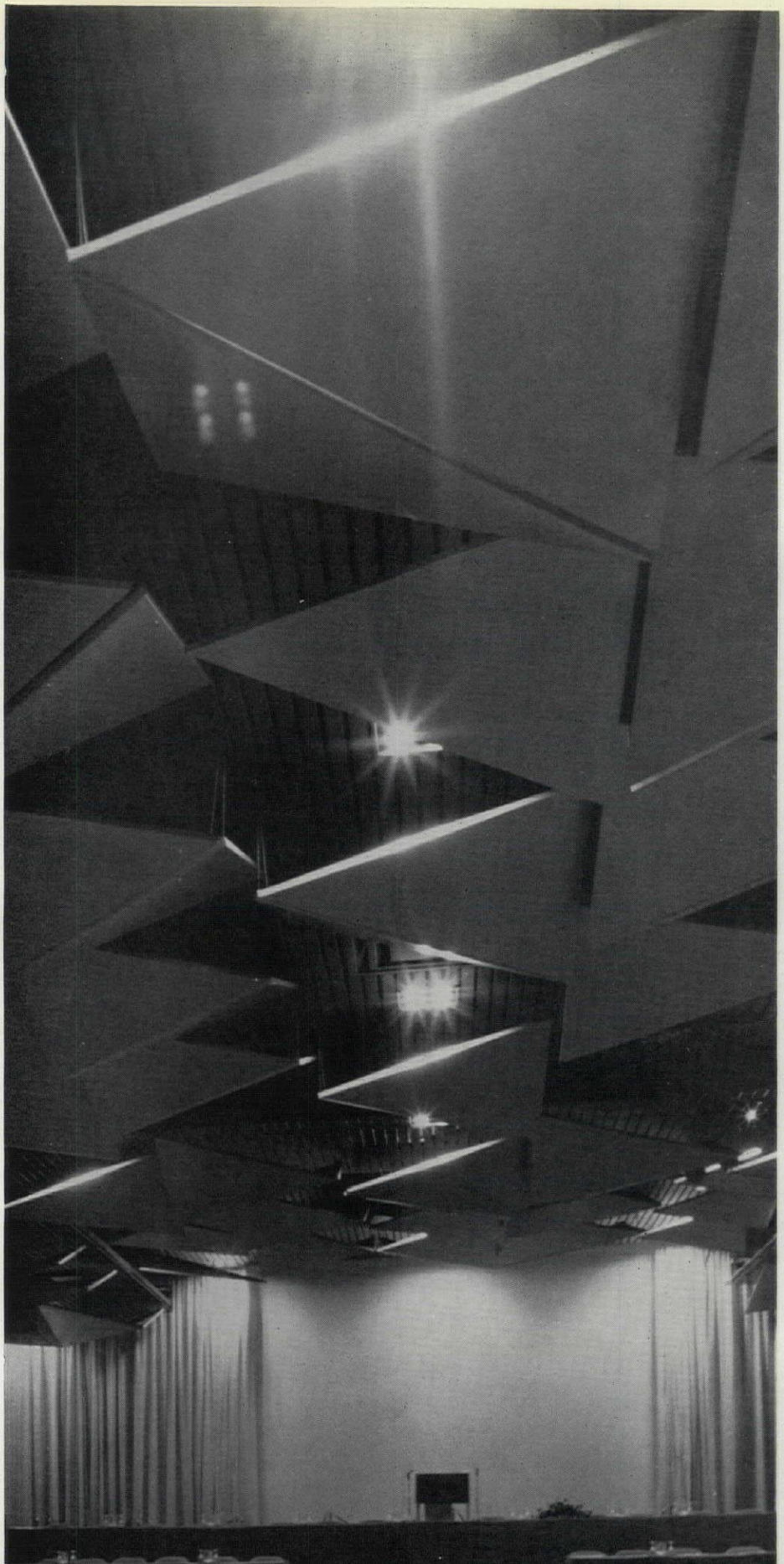
Architects: Cassidy, Farrington & Dennys

In addition to the three areas of the Royal Lancaster Hotel that have been chosen for illustration on the foregoing pages, there is another area that deserves attention for more technical reasons: the ground floor area designed for conferences, exhibitions, banquets and dances. It consists of the Nine Kings Banquet Suite and the Westbourne Suite, and the technical interest lies in the equipment that makes it possible for them to be used in a variety of ways, together or separately—see facing page.
If the Nine Kings banquet area and the Westbourne Suite are used separately, three of the staircases can be blocked up and the balustrades removed to form a continuous floor surface on the upper level. The Nine Kings banquet room can be divided into three equal parts by horizontal sliding folding partitions and the whole room can also be opened up to the adjoining reception area by rising wall-panels—a system suggested by the section with its change in ceiling level. Both areas had to have the flexibility of a television studio with elaborate facilities for lighting and projection, as well as the possibility of sub-division by means of movable partitions. The Nine Kings banquet room has galleries on which additional projectors and screens can be set up, and where interpreters with simultaneous translation equipment can sit during international conferences. It also has a ceiling of suspended and removable metal light-reflectors which dominate the complicated arrangement of light fittings above and help to give a busy room some degree of unity. In the Westbourne Suite cables can be dropped through the ceiling at any point, making for complete flexibility in the lighting arrangements. This ceiling, consisting of a 4ft. square grid of steel channels, provides the top fixing for demountable partitions. These in turn can be quickly removed with an ingenious piece of machinery and neatly stored in stacks against the wall.

ecti on of Nine Kings banquet area, showing rising wall panels (see page 126)



plan of Nine Kings banquet area
key: a, cloakroom. b, reception. c, banquet room. d, staircases which can be blocked up. e, single and double sliding partitions. f, rising wall panels. g, galleries



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14, the Nine Kings banquet room prepared for a conference and, 15, for a dinner. The Westbourne Suite seen on three occasions from the same viewpoint : 16, a dinner-dance; 17, a motor show and, 18, an exhibition.

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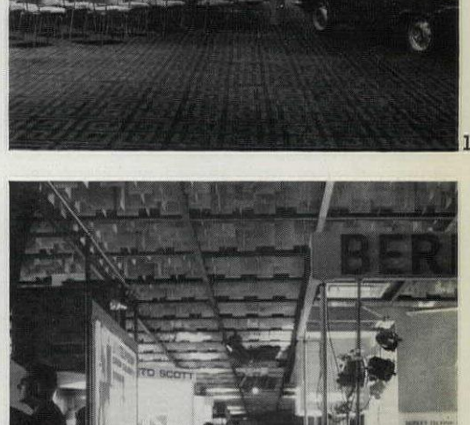

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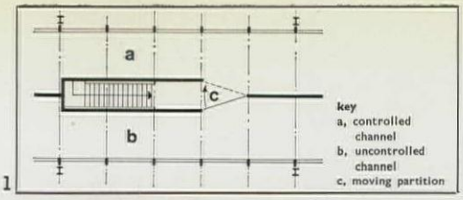
The flexible use of conference space exemplified in the Royal Lancaster Hotel has been a feature of a number of recent hotels and similar buildings, the flexibility being facilitated by the use of movable partitions, sliding and folding on fixed tracks. In the following article Mr. W. Launchbury discusses the problems involved in the subdivision of internal space by these means with illustrations from the Royal Lancaster and elsewhere.

Sliding partitions

W Launchbury

Any internal partition which is not carrying structural load may at some time require to be removed, and the ease with which this can be done may influence its original selection.
In certain cases, however, there may be specific need for the partition to be removed, and possibly replaced, frequently and quickly, and this factor may well over-ride all others.
In its simplest form the moving partition is a wall component which acts as an over-size door, and the problems of construction may be resolved by normal door technology. For example at Gatwick Airport such partitions have been used to control the movement of passengers. The South Pier was designed particularly to handle Channel Island flights, on which outward passengers travel without controls, but are subject on return to examination by HM Customs. The 21ft. wide pier is divided centrally at first floor level into two walkways by a fixed partition; on this partition are centred staircases leading down to the aircraft gates, 1.
An 8ft. section of partition at the head of the staircase is made to pivot at one end, with a roller at the top of the other end suspended by a simple curved piece of railway, 2.
The partition fastens at positions at each end of the track, to allow access to the staircase from one or other of the walkways, and, to provide the required check on security, the locks at each side operate warning lights in both customs and immigration halls.
The most common application of moving partitions, however, is in the subdivision of internal spaces. The need for them is most likely to occur in spaces designed for teaching, discussion, recreation and social activities.
Subdivision of such spaces will usually demand a sense of privacy within the divided areas, and the sound insulation quality of the wall when erected may be the principal requirement, together with the relative ease of operation.
These two factors are often linked with each other and with the overall question of cost.
In addition, the circulation problems presented by the introduction of subdivisions may insist upon pass-doors together with the possible need for fire-resisting or flame-spread resisting qualities in those parts of the partition forming circulation and escape routes.
Lastly, the stacking or storage of the partition or its component units in the open position may require consideration.
A description of these and other factors follows in the comparison of various types of systems, but it is useful to examine three of them in more detail.



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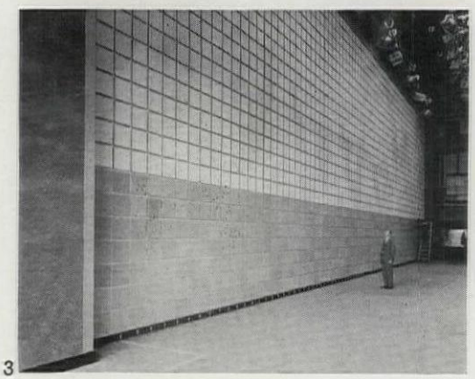
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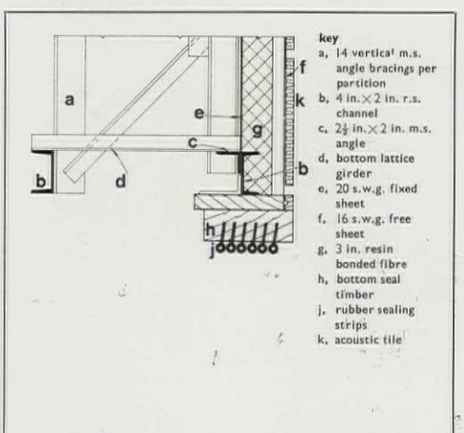

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5

A. EASE OF OPERATION

It is essential that the system of operation is suited to the number of people available for the work, and their respective skill and strength. An important consideration is the time available for the operation.

B. SOUND REDUCTION

When partitions are designed to be moved by gear, the weight factor is likely to become critical. Most of the available panels depend upon the mass law to reduce sound transmission, and with the most efficient seals at floor, ceiling, side walls and panel edges, the sound reduction capability of a partition built like a solid door and around 2in. thick (say 5lb. per superficial foot) will rarely exceed 30dB; and this is not always easy to achieve.
A marked improvement can be made by running two parallel walls a foot or more apart, with sound-damping material on the faces lining the cavity. With this construction values of about 45dB are possible. This compares with the dB reduction given by a 4½in. single brick wall plastered on both sides (which weighs about 55lb. per sq. ft.) Although this would not necessarily provide a satisfactory environment for quiet discussion in a space divided from another in which a noisy activity was taking place, this sort of level is usually considered suitable for the high demands of restaurants and hotels specializing in multiple letting of social rooms.
There is occasionally an absolute requirement for much higher levels, and 3 shows an example of a moving partition for this purpose at the Wembley television studios. The section detail, 4, at the bottom of one of a pair of very large vertical sliding screens, shows the complex arrangement of structure with fixed and semi-fixed steel sheets. These help to overcome the mass law limitations by the inherent frequency characteristics of the materials and their disposition and relationships. The tested performance of this screen showed a sound reduction of 68dB, and it is notable that the weight of the unit (23 tons) is only a little over 10 per cent of that which would be required to give the same result by mass alone.
Most commercially available moving partition systems make use of panels constructed similarly to flush doors, and tend to have frequency correspondence characteristics which slightly lessen efficiency at mid frequency levels; but greater values can be achieved by the use of composite core construction in conjunction with newly developed materials such as lead-loaded plastic sheet.

C. ACCESS THROUGH THE PARTITION

The provision of pass-doors in most partitions creates a structural weakness, and it is usually not easy to avoid the introduction of threshold members. In some systems these are designed to occur below the floor-finish level to avoid the hazard of an upstand.

TYPES OF TRACKED PARTITION

Horizontal folding/sliding: These screens are used in a great number of buildings, especially schools, and are formed by a range of door-type panels edge-fixed to one another by hinges, and supported by top and bottom guides, the weight being taken by floor or ceiling rollers. There are several types of gear on the market, available for specialist joinery firms to use in the manufacture of this type of partition. The ratio of width to height is important. Over-wide leaves can cause distortion and sag owing to the cantilevered weight from the track line; over-narrow units can create serious bunching problems when they are stacked in folds at the end of the runs in the open position. Surprisingly high screens are possible, as can be seen from 5 (school at Clapham Junction), but problems in handling arise when the screen is over 12ft. high. When double runs are used to increase the sound

reduction qualities, sufficient space must be left between the runs to accommodate the folding operation, 6 (school at Beckenham).

Horizontal unlinked sliding and sliding-folding : Unlinked units sliding independently along floor and ceiling tracks are a feature of certain systems which have been in use for considerably longer in the USA than in Britain. This principle overcomes any problems in sound-sealing around the hinges of normal slide-fold partitions, and allows more complex contouring of the meeting edges of leaves. In the eight different systems of Fairhurst 'Unitfold' and 'Unitslide' screens (British Werno Ltd.), the unlinked characteristic of the panels allows them to be switched by special railway mechanisms into a variety of stacking arrangements.
Two 'Unitfold' screens, each 54ft. long and 14ft. 6½in. high, are used in the banqueting area of the Royal Lancaster Hotel, 7 and 8, one of which comprises a double run. The panels, which are finished with p.v.c. cloth and teak veneer edges, are sprung tight by a compression leaf when in the erected position, and are run away and turned into concealed pockets at the end of the tracks when not in use. The single run is designed to give 31dB reduction, and the double run 40dB reduction.
The 'Tranway' system (Trandec Ltd.) uses one of the above principles, with double rails to take leading and trailing edges of the door respectively to turn the panels into the side pockets in a slightly different way.

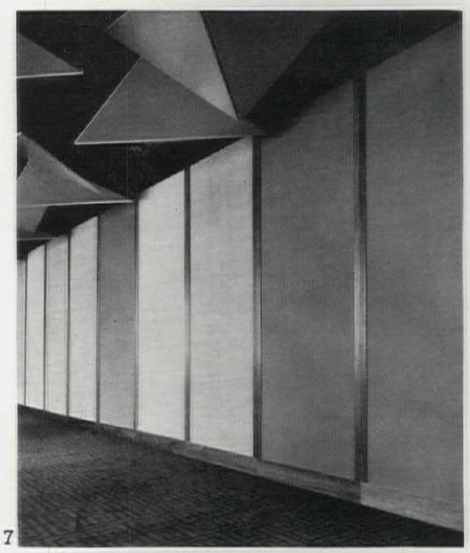
Horizontal straight-sliding : The action of straight-sliding leaves usually relies on relatively wide panels to avoid racking in operation; storage in the open position can be difficult.
In the banquet hall of the Mecca Ballroom at Birmingham this problem is solved in the 88ft. long partition by the use of ten separate leaves on five tracks for each of the two runs of panels which store away into long side pockets serving both runs, 9, 10 and 11.
Each leaf of the screen is 4in. thick and made up of a complex laminate construction designed to improve upon mass law principles. The sound reduction achieved is in fact about 50dB. Curtains conceal the screen when in use.

Vertical straight-sliding : 'Flown' partitions which rise into a pocket above ceiling level naturally provide planning difficulties, but with counterweights the system can be operated with simple manual or powered gear in the same manner as a theatre fire curtain.
In the four 21ft. 2in. wide x 7ft. 8in. high flying partitions in the banqueting area of the Royal Lancaster Hotel, 12 and 13, the lower edges of the screen in the raised position align perfectly with the ceiling, and are unnoticeable. In each screen there is a pair of self-closing hinged doors, and the floor receiving track is reversible to allow the screen to lower into a prepared channel and the threshold bar to rest level with the surrounding floor finish. Magnetic seals are used at the edges of the panel.

Other systems : Other methods of screen movement have been used, including the garage 'up and over' principle, and the bodily shifting of walls at right angles to their plane to enlarge one space at the expense of that adjacent.
One of the most interesting recent installations is the vertical concertina folding partition at the Royal Garden Hotel, 14 and 15. This makes use of a double skin of relatively thin but heavy lead-loaded plastic material, sheathing a fibreglass core, the whole curtain assembly rising into a 2ft. 3in. ceiling void.
The opening is 53ft. 8in. wide x 13ft. high and the internally laminated horizontal ribs at 2ft. 8in. vertical centres span the full width, supported by ropes every 6ft. Curtains which run across the screen face when it is in use run away into side wall pockets.

6

7



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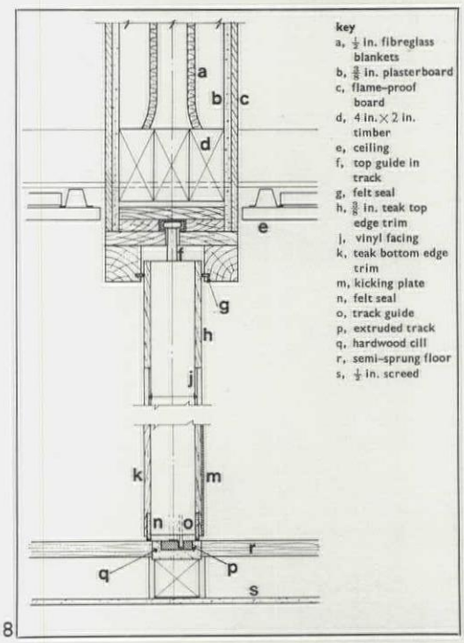
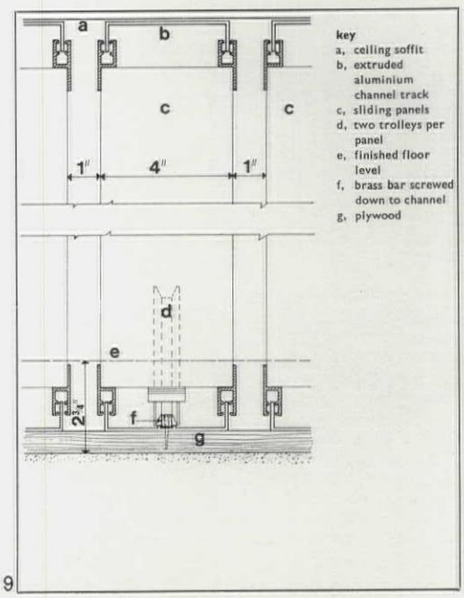


key
a, ½ in. fibreglass blankets
b, ⅜ in. plasterboard
c, flame-proof board
d, 4 in.×2 in. timber
e, ceiling
f, top guide in track
g, felt seal
h, ⅜ in. teak top edge trim
j, vinyl facing
k, teak bottom edge trim
m, kicking plate
n, felt seal
o, track guide
p, extruded track
q, hardwood cill
r, semi-sprung floor
s, ½ in. screed

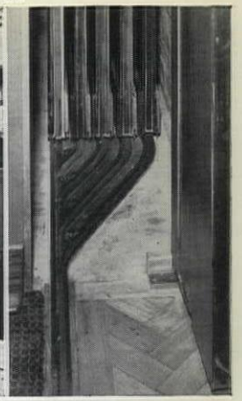
9



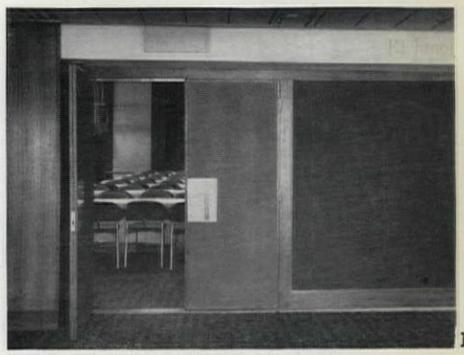
key
a, ceiling soffit
b, extruded aluminium channel track
c, sliding panels
d, two trolleys per panel
e, finished floor level
f, brass bar screwed down to channel
g, plywood

10

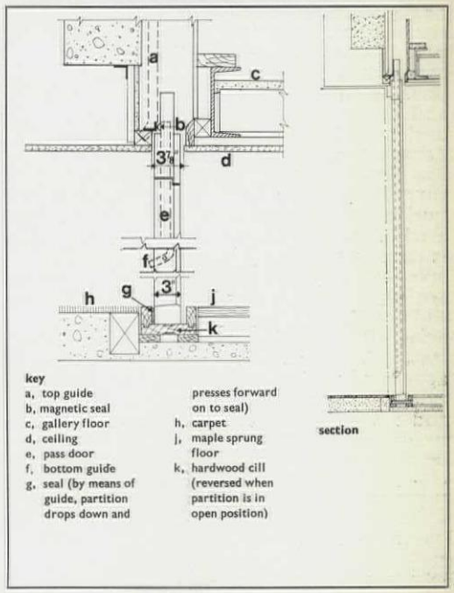
11



12

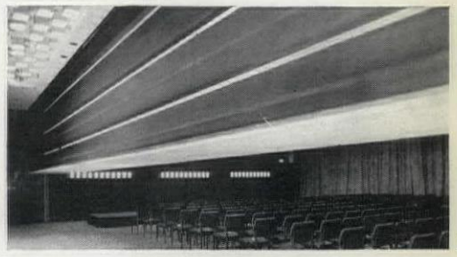


13



key
a, top guide
b, magnetic seal
c, gallery floor
d, ceiling
e, pass door
f, bottom guide
g, seal (by means of guide, partition drops down and presses forward on to seal)
h, carpet
j, maple sprung floor
k, hardwood cill (reversed when partition is in open position)

14



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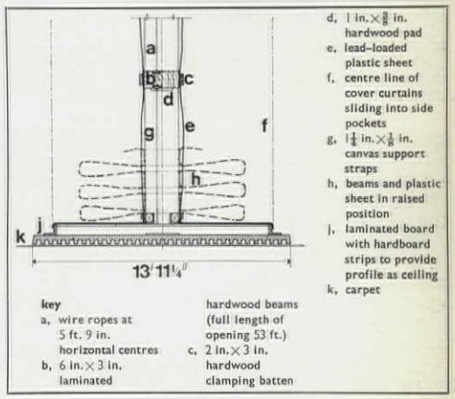


key
a, wire ropes at 5 ft. 9 in. horizontal centres
b, 6 in.×3 in. laminated hardwood beams (full length of opening 53 ft.)
c, 2 in.×3 in. hardwood clamping batten
d, 1 in.×⅜ in. hardwood pad
e, lead-loaded plastic sheet
f, centre line of cover curtains sliding into side pockets
g, 1¼ in.×⅛ in. canvas support straps
h, beams and plastic sheet in raised position
j, laminated board with hardboard strips to provide profile as ceiling
k, carpet

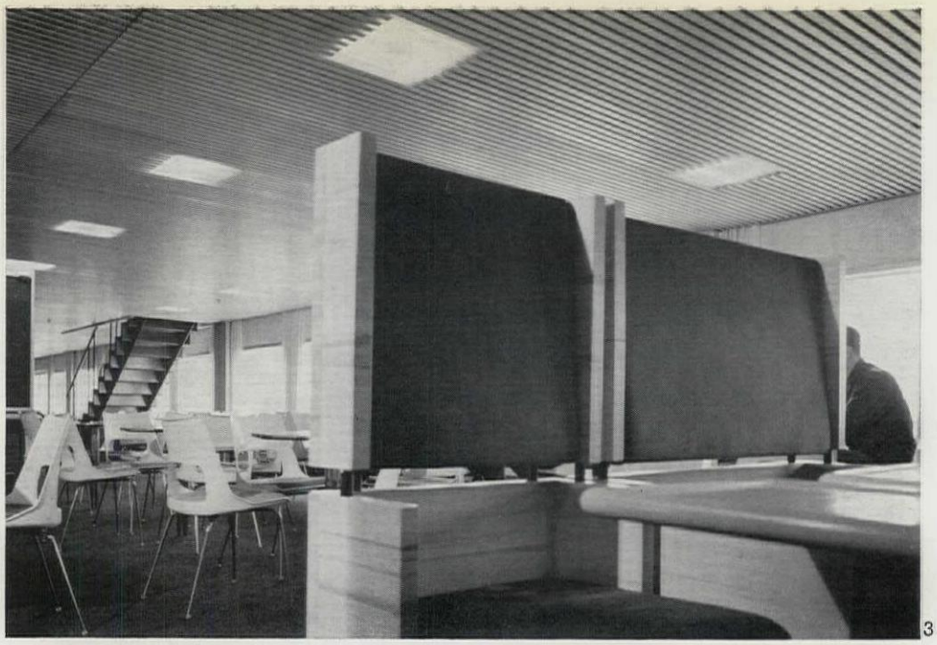
Motor-ship Fennia

Interior architect: Bengt Lundsten

The recent congress at Amsterdam of the International Federation of Interior Designers called for co-operation between interior designers, architects and town-planners, stressing the fact that their fields of activity were not disparate, but inter-related parts of our entire man-made world. It is therefore regrettable but not in the least surprising that all the jobs illustrated in this section of the AR are examples of the designer being brought in to dress the place up instead of being included in the planning team from the start.

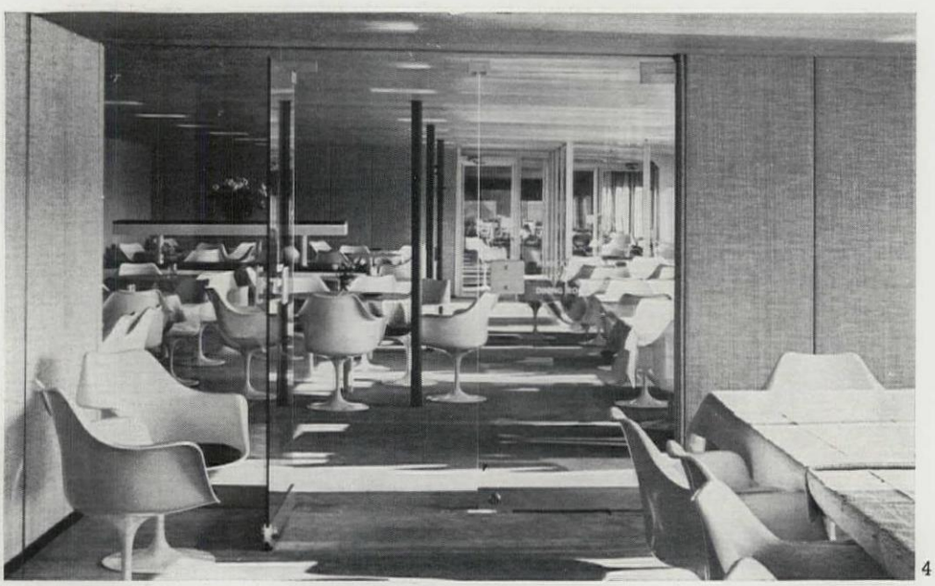
The Finnish owner of the Fennia originally commissioned the builder to design the interior as well, but became dissatisfied with this part of his work and called in an architect. Despite the severe limitations that such a procedure imposes, a serious effort was made to design the interior on a modular basis, using a limited number of materials throughout. The architect, had it been possible, would have applied a comprehensive system of prefabrication to provide an efficient method of operation and at the same time a philosophy of design which was akin to the functional approach of the engineer.

The Fennia is a day and night ferry carrying passengers, cars and trucks on a twelve-hour voyage between Stockholm and Turku. Her unusually high superstructure is made possible by the fact that she operates only in sheltered waters. There are eight decks, one of which is for cars and trucks entering by the drive-on and drive-off principle through ports aft and forward. The ship is exceptionally well appointed with a swimming pool, a cinema, a conference room, sauna baths and a variety of bars and restaurants.



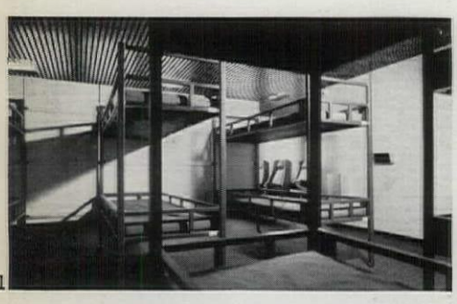
3

3, the cafeteria, with stainless steel and glassfibre chairs by Kay Korbing, contrasting with the sturdy built-in seating of fir. The carpet is charcoal grey, the seat upholstery is brown fabric, and the circular tables in the background (designed by the architect) have single fixed stainless steel pillars and dark blue tops. 4, looking into the restaurant from the lounge. Wall panels are finished in grey linen or white-painted board. False ceilings, which are standard in the public area, are anodized aluminium snap-on type, unpainted. The columns are steel, painted blue, the carpet is ochre and the recessed light fittings have shades of obscured glass. 5, the embarkation hall, looking towards the cabin corridor aft and the staircase to the restaurant deck. (Information supplied by Cyril Morrow.)



4

1, the rest room with tiered bunks for 39 passengers of both sexes. The walls are fir plank panelling, the false ceiling is anodized aluminium painted dark blue, the floor has charcoal grey fitted carpet and the mattress covers are olive green. 2, one of the two verandahs adjoining the rest room. The aeroplane-type reclining chairs are upholstered in black leather.



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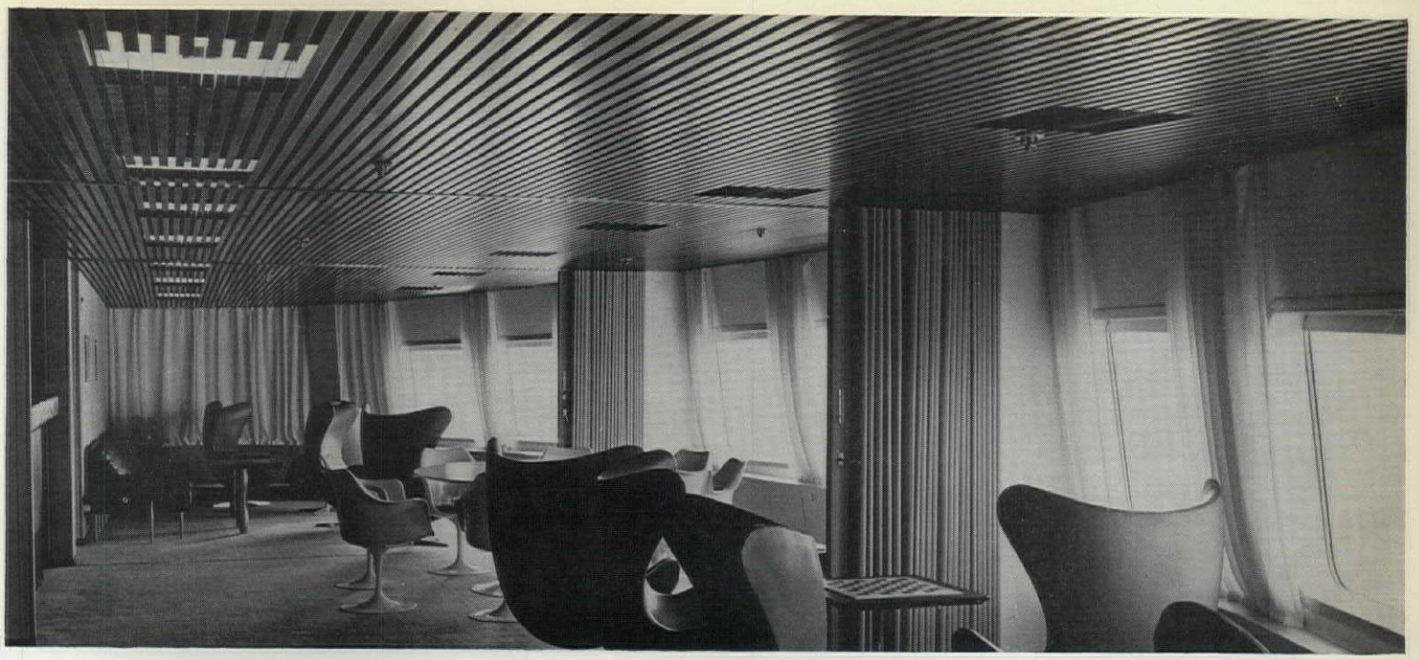
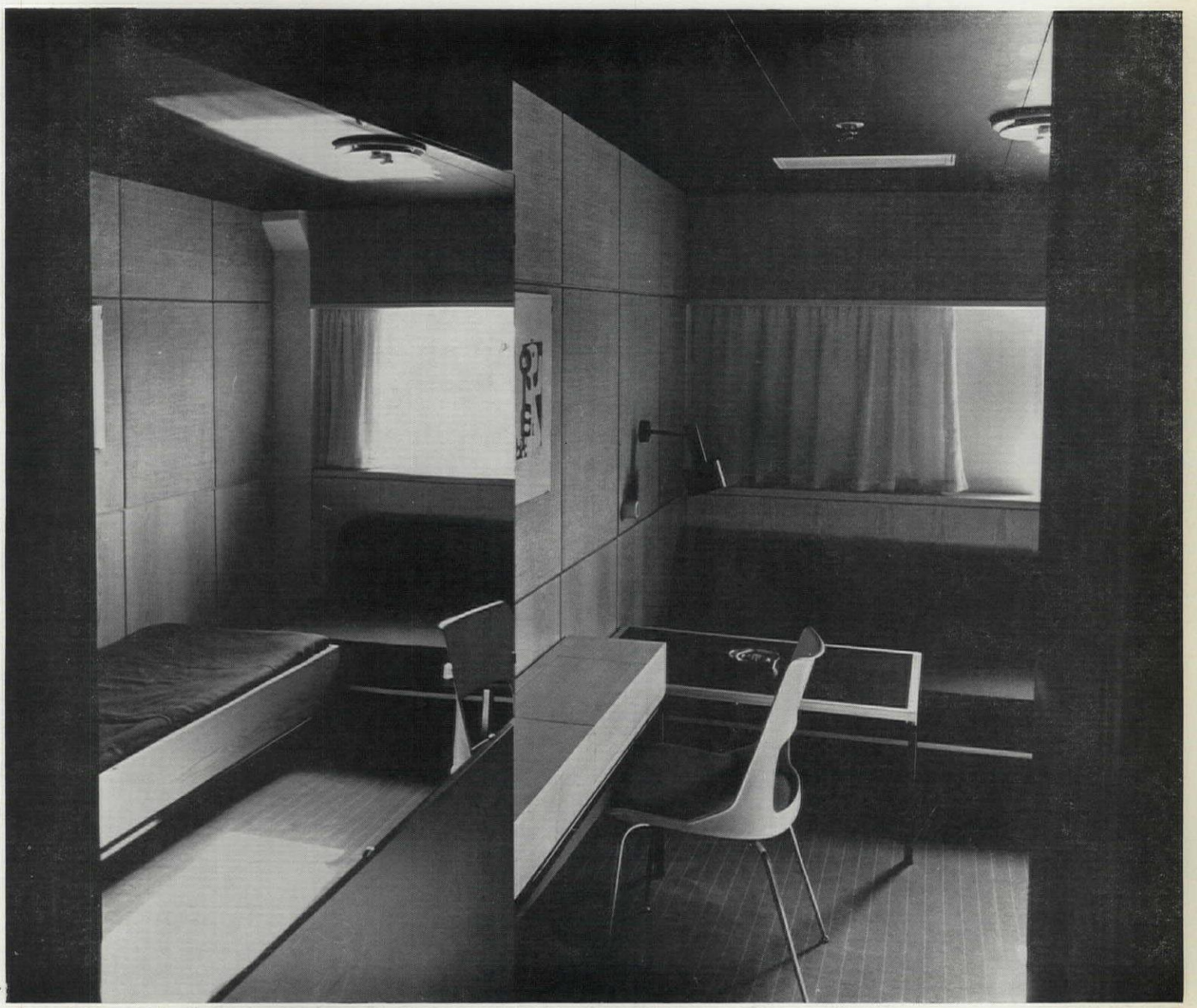


6

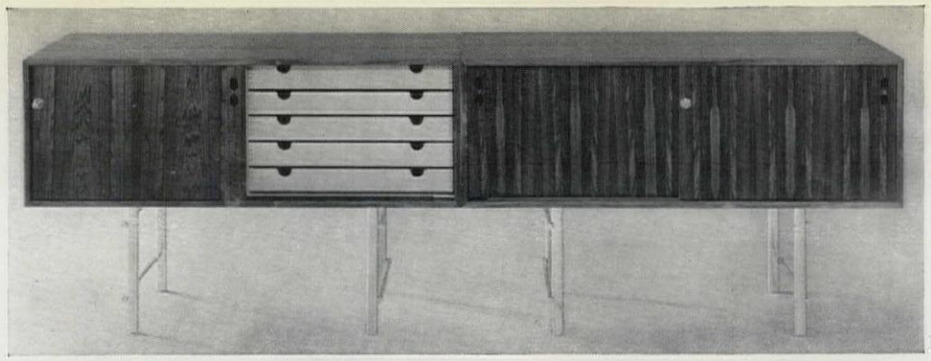
6, the conference saloons in the Finnish motor-ship Fennia with folding partitions for sub-division. Sofas and tables are on fixed pillars, as in the cafeteria. The sofas are upholstered in natural leather, the carpet is ochre and the wall panels are finished in light grey linen. 7, a two-berth luxury cabin. The walls are panelled with light grey linen and fir veneer, the ceiling is blue-painted hardboard, the carpet is ochre and the furniture is melamine laminated fir.



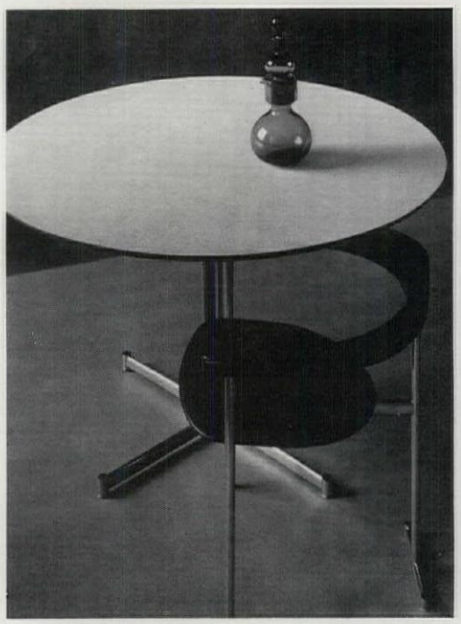
7

Furniture system from Norway

The INFI system, designed by the Norwegian architect Jan Lunde Knudsen, has been developed to fulfill a variety of table and desk requirements.
The system consists of five different assembly nuts shaped in various ways and a number of standard leg and rail components all made from low-gloss, chromium finished oval tubing but supplied in three different tube dimensions and three different heights to suit various requirements.
Through the use of the assembly nuts, one can combine either legs only to provide cruciform bases, or legs and rails to form pedestal bases, or rails only to provide square or rectangular frames. In this way it has been possible to develop a very large standard range of tables and desks, using a comparatively small number of components. The table system alone includes some 180 models, from small coffee tables to large boardroom tables.
The INFI system also includes a large range of executive desking, 4, as well as storage units, 1. A seating system is at present being developed. The first chair, used in the Looking Glass Restaurant at the Royal Lancaster Hotel, is shown in 3.
The INFI table and desk tops are made from Finnish ply, veneered in rosewood or teak. Laminated plastic tops are also available and marble tops in four different colours are included in the standard range up to a maximum size of 4ft. 11in. diameter.
The leg sections are supplied with adjustable feet and standard floor and wall fixing devices are available.
The system is marketed internationally through INFI International Ltd., and in Britain by Westnofa (London) Ltd.
Manufacturers of steel, Georg Eknes Metallindustri.



1



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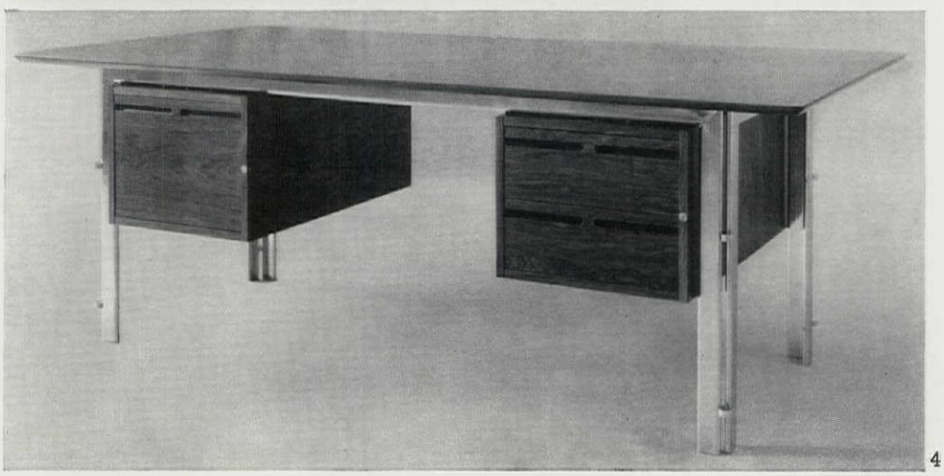

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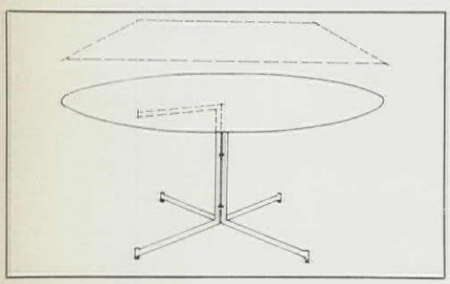
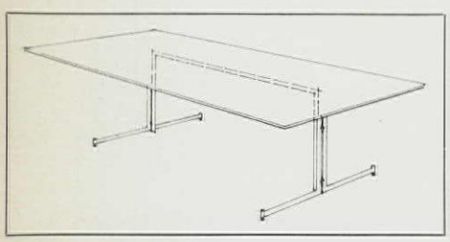
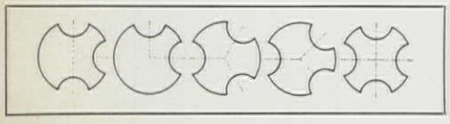


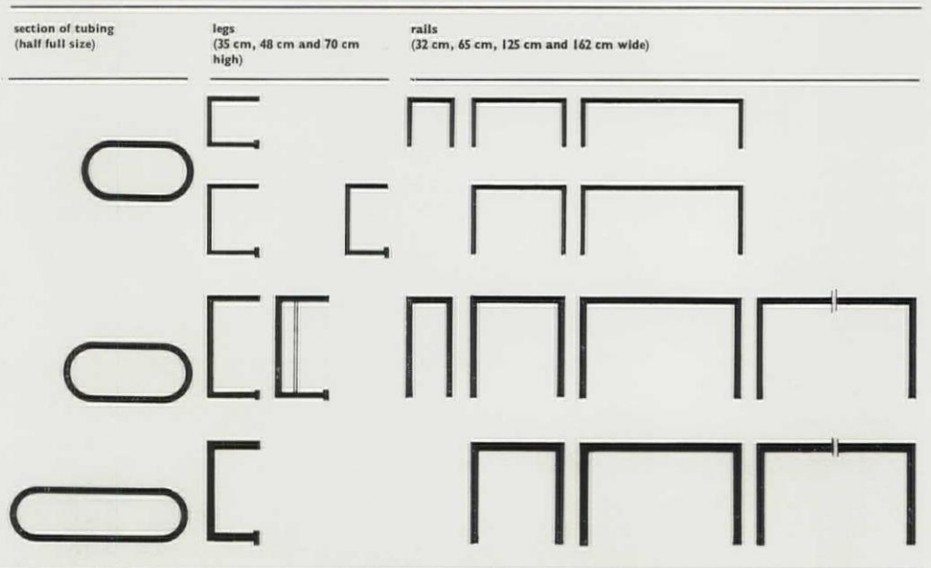
cruciform base formed by legs only



pedestal base formed by legs and rails



assembly nuts



Stanley Cerely

TRANSPLANTING SEMI-MATURE TREES

Semi-mature trees are the most highly to be recommended for development schemes, and it is reassuring to know that the natural hazards which accompany transplanting them, even in large numbers, can be largely overcome by modern techniques. An alternative to semi-mature trees is saplings, but if these are used, some twenty or thirty years must elapse before they attain sufficient size to fulfil their purpose, whether that purpose is solely decorative or simply to serve as a screen for unsightly or noisy workings or as a windbreak for crops. Another alternative is large trees, e.g. those exceeding 50 ft. in height or 10 tons in weight, but they are very costly to move and, even apart from costs, the transplanting of large trees is seldom justified.

The experience gained by firms undertaking tree transplanting suggests that the most worthwhile results, bearing in mind, *inter alia*, the question of costs, are likely if trees between 20 ft. and 30 ft. are selected for moving. Although, theoretically, there is no limit of height or weight for transplanting, costs mount steeply beyond this point. So the most important point to be noted by those who may wish to incorporate transplanted trees in development plans is that it is well not to be too ambitious in the matter of size.

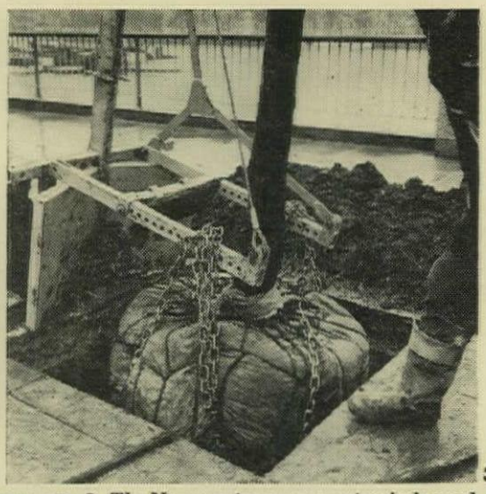
What is meant by a semi-mature tree? The definition, in this context of transplanting, of the British Standards Institution (BS 4043:1966) is 'A tree or shrub at an advanced stage of growth which is to be transplanted with an earth root-ball, or in certain cases bare roots, and is of such combined size and weight that special equipment will be needed to carry out the operation. Such trees will generally be between 20 ft. and 50 ft. in height and will weigh between 5 cwt. and 10 tons; they also include certain shorter trees and shrubs, which weigh more than 5 cwt. and need special lifting techniques or equipment because of their spread and weight.'

1

Nobody expects that the transplanting of semi-mature trees will regularly meet with 100 per cent success. The figure upon which all interested eyes are anxious to focus is the likely percentage of failures. Such a figure is valuable only if it is based upon the experience over a number of years (five as an absolute minimum and ten or more desirable) of firms engaged on the work on an extensive scale. Very few at the present time would qualify as able to quote a significant percentage based on this kind of experience. It is barely ten years since the modern techniques which are the subject of this article were first used in Britain. Only four years have elapsed since the first public demonstration was given.

The Civic Trust, who were pioneers in this field, state that their initial failure rate up to 1965 was approximately 17 per cent of trees planted between 1961 and 1963. Much of the Trust's initial work, however, was experimental, particularly as regards the adaptability of different species to various sites, soils, climates, water tables,

2



3

1 (*previous page*), *a tree transplanting operation* 150 *years ago.* 2, *The Newman tree mover, extensively used by the Civic Trust in the early part of their tree planting campaign, operated by two men, can lift, transplant and replant a tree.* 3, *the Newman Mini tree mover lowering a tree into a specially prepared hole. The rootball of the transplanted tree is covered with protective sacking.* 4, *a tree being taken to its new position in the scoop of the Michigan* 75 *Transplanter coupled to a tractor.* 5, *the transplanter with its hydraulic operated blade cutting round the tree's rootball.*

4

5

seasons at which movement was undertaken, etc. Another important adverse factor was that the Trust's early searches for suitable trees were not productive of the best, resulting in large quantities of woodland birch being used.

Considerable improvement has since resulted from the valuable experience gained. The average figure for reliable firms today is likely to be in the neighbourhood of 10 per cent and the more often such vital decisions as the selection of species for a particular site, the need for root pruning, etc., are left to those who, by their experience, are best able to give them, the quicker will the failure rate be pulled down to the 5 per cent which has been predicted for the future. The results achieved to date nevertheless demonstrate conclusively that transplanting by modern methods of semi-mature trees is, in every sense, a viable operation. Leading the field in equipment specially designed for this work is the Michigan Tree Transplanter, a powerful, four-wheel drive machine, developed in the USA and fitted with a Vickers-Armstrongs Onions hydraulically-operated tree planter unit. This versatile machine is capable of dealing with deciduous or evergreen trees up to 30 ft. or more in height, depending on species, and of a girth of up to 30 in. (measured 2 ft. above ground level). Its great advantage is that, if the distance between lifting and transplanting positions does not exceed 2 miles, it can be used to maximum economic effect in the manner for which it is ideally suited, i.e. digging out, lifting, transporting and planting—all in one continuous operation. At present in this country, two sizes of the machine are available. The Michigan 85 Series 111 weighs 9 tons and handles trees of up to five tons, while the Michigan 75 Series 111 at 16 tons carries trees of up to 7 tons.

Until recently it was the only machine which could be used for the whole operation. It carries, in front, a massive, curved, 8 ft. wide blade, which is used for digging out the tree and as a scoop for lifting and carrying a tree with a large ball of soil around the roots. Its first task is to dig out the holes to be occupied by the transplanted trees. This is simple and rapid work, the pits being normally $2\frac{1}{2}$–3 ft. deep. At the lifting site, the Michigan drives the blade into the ground a few feet from the bole of a selected tree, the distance varying according to root spread. The process is repeated once or twice in different positions for the same tree. The tree is then lifted in the scoop, which is tilted to allow the tree to rest at the normal carrying angle of about 45 degrees, though this can be varied to assist in the clearing of obstacles. Depending upon the route to the planting position, it may be necessary to tie back branches to prevent their being damaged. The Michigan is itself capable of setting a tree in its new position at an approxi-

mately vertical angle. It is able to assist in final adjustments with its robust steel snout and under-shot jaw. When the tree is in position, the soil is firmed by individual labour to ensure that no air pockets are left around the base. It is particularly important that transplanted trees are firmly secured in their new positions, as success largely depends upon there being a minimum of root movement. If woodland trees at the edge of a copse, for example, have been selected for moving, it is likely that they will have grown somewhat off balance, due to exposure to the light on one side. After transplanting, such trees are especially liable to movement in strong winds unless staying has been well attended to. Stakes are driven into the ground, or 'deadmen' are buried at some distance from the bole, and the tree is secured to these by three, or sometimes four, wire guys which may have to remain in position for two years or more. After-care will necessitate periodical visits to the transplanted trees. In the early stages, pruning, mulching and liberal watering may be necessary. Handling the Michigan becomes increasingly difficult on sloping ground. Being a tyred vehicle, traversing over tilled or waterlogged ground, or any prepared surface such as a playing-field, tennis court, etc., is not to be recommended.

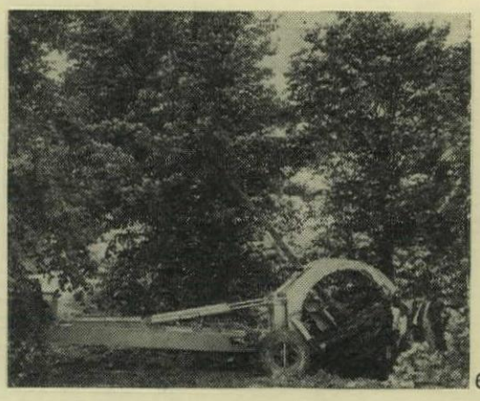
For obvious reasons, it is not practicable to quote in general terms the cost of tree-moving per tree. Among other things, this must depend upon the distance of the carry, species and size of trees selected, amount of preliminary work necessary—such as root pruning, draining and fertilization of the soil at the new site, and other variable factors. If the moving distance is no greater than ¼ mile, two trees of, say, 25 ft. can be transplanted in an hour. If an independent guying crew (two men) is available, the rate can be stepped up to three trees an hour. These speeds apply only if working conditions are ideal; e.g. site readily accessible, ground reasonably level, weather satisfactory.

When the Hall & Ham River Group, who use the machine extensively for screening their gravel workings and restoring the landscape when pits are worked out, recently staged a tree transplanting demonstration in East Anglia, they stated that, if 50–100 trees, 25 ft. high and available close to an open transplanting site such as that of the demonstration, were moved, the cost would be about £10 per tree. This figure, it will be realized, is very low when a comparison is made with the cost of moving single specimen trees, or if other methods of transplanting are used because, for example, the carrying capacity of the Michigan is being exceeded. In any case if the carrying distance exceeds two miles, it becomes necessary to introduce another transporter, with a consequent rise in costs. A cost of £50 per tree for transplanting semi-mature trees by means of other types of equipment is low. At present the only Michigan operators in Britain are the Hall & Ham River Group, the National Coal Board and Scottish Land Development.

Of the greatest importance in transplanting is the desirability of root pruning. This is to enable the tree to put out new fibrous growth which will help it to become rapidly and safely established after being moved. Ideally, this operation should be commenced two years before removal. Much controversy attaches to the question whether root pruning is really necessary in a large number of cases. If the large root-ball with which it is transplanted is set down intact in soil similar to that in which the tree was grown, and the water-table, climate, aspect and elevation are comparable, it may well be that root pruning, which is an additional expense, can be dispensed with. The nature and extent of after-care may obviate much of the need. The necessity for root pruning, or otherwise, is best determined by inspection of the site where the tree is to grow.

I recently watched the transplanting of about 50 valuable ornamental trees, some of which were extremely rare in this country. Most were over 40 years old; some were over 60. They were lifted by the Michigan 75 without prior root pruning. The fact that the owner, a very experienced arboriculturist and nurseryman, decided to transplant such old trees without root pruning illustrates that this operation is not regarded as an essential prerequisite of successful moving in all circumstances.

6, the Vermeer transplanter, newly imported by Clapham Nurseries, lifting out a tree prior to transplanting. The digging is carried out by chain driven teeth which saw through the soil and at the same time lower the cups underneath the rootball. The teeth operate on both sides of the tree and by hydraulic levers, the tree with its rootball is lifted from the ground into the transporting position. 7, a close-up showing the cups round the rootball. The tree can now be taken from the site and replanted in an identical hole which has been previously excavated by the machine to guarantee a perfect fit.



6

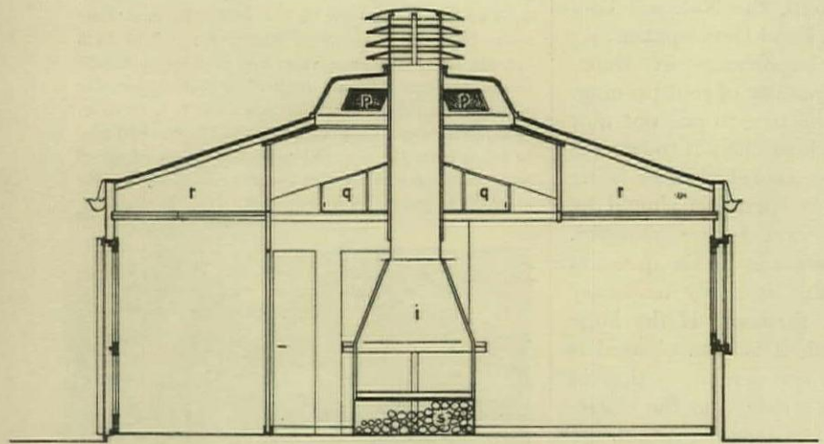
7

AN ITALIAN PREFABRICATED WEEKEND COTTAGE

architect **ROBERTO MENGHI** | *photographs by Ugo Mulas and Studio BN*

This one-storey cottage, with a floor area of 560 sq.ft., has been designed by the Milanese architect Roberto Menghi as a standard prefabricated product suitable for permanent occupation but intended particularly for holiday use on lake or mountain side. It is being marketed by the IPA Company of Milan under the name of the 'Castelletto,' at the equivalent of about £2,580 (before devaluation), excluding packing and transport to the site. The price of the basic prefabricated structure, excluding the foundation slab, the cost of erection, the central fireplace and a number of built-in cupboards, is the equivalent of £1,680.

The cottage is square in plan with a double-walled steel fireplace in the centre, opening into the living-room but also giving warmth to the bedroom. The walling material is building-board, in two thicknesses with an airspace between in the case of the external walls, which are reinforced with vertical supports of galvanized steel tubing and insulated with asbestos. The wall-boarding stands on a special galvanized steel fixing set into the concrete foundation slab, and at the top is attached to the roof structure by a similar fixing. The roof structure is composed of linked sections of galvanized steel covered with moulded fibreglass, reinforced to give rigidity, and jointed with synthetic rubber to ensure watertightness. The foundation is of reinforced concrete covered first with a damp-course of polythene sheeting, then with a screed and then with the finished flooring. In the case of living-room and bedroom this is wood boarding; in the bathroom and kitchen it is vinyl-asbestos tiling. The internal wallboard partitions are veneered in pine where they face into the living-room and elsewhere with laminated plastic. Windows are softwood with brass furniture and

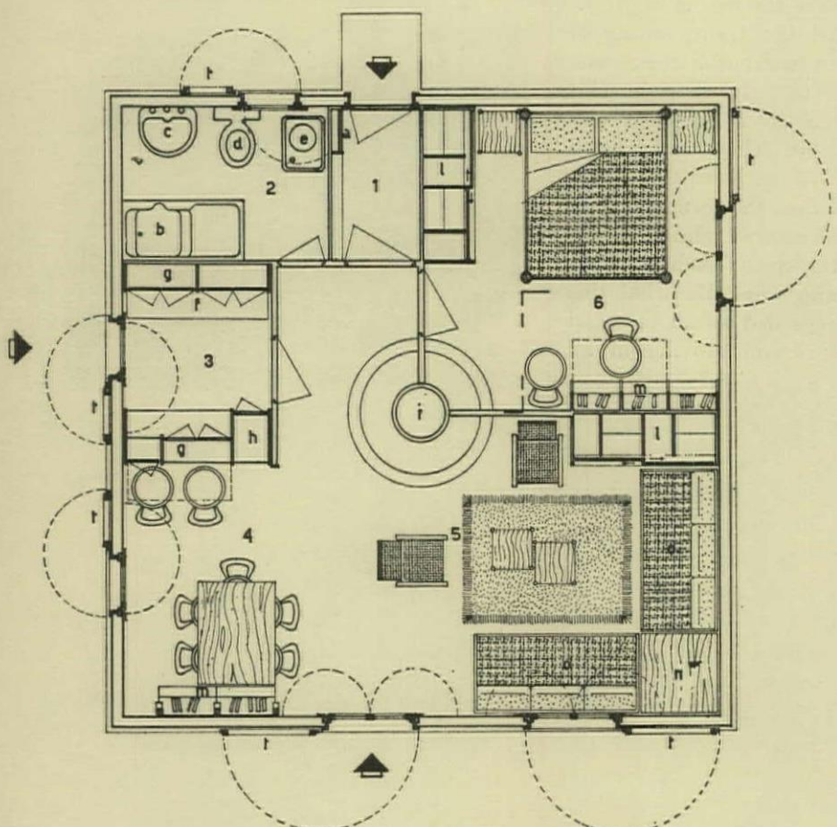


cross section

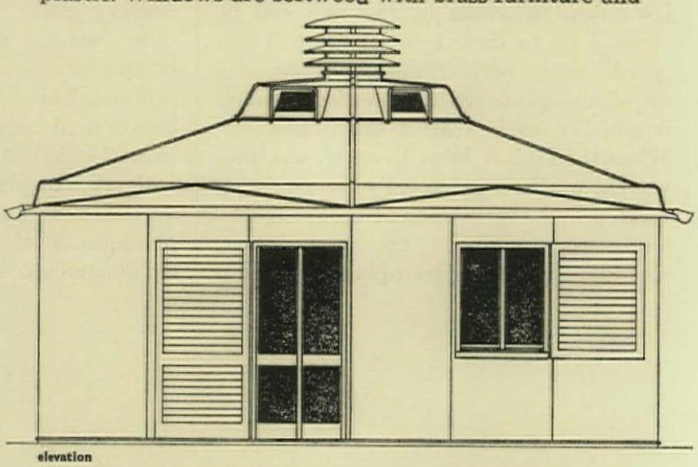
key

1, entrance
2, bathroom
3, kitchen
4, dining area
5, sitting area
6, bedroom

a, cupboard
b, sitzbath
c, washbasin
d, w.c.
e, shower
f, sink and cooker unit
g, storage
h, cupboard
i, fireplace
l, wardrobe
m, bookshelves
n, meters, etc.
o, divan
p, ventilation
q, cupboard
r, roofspace
s, log-store
t, shutters



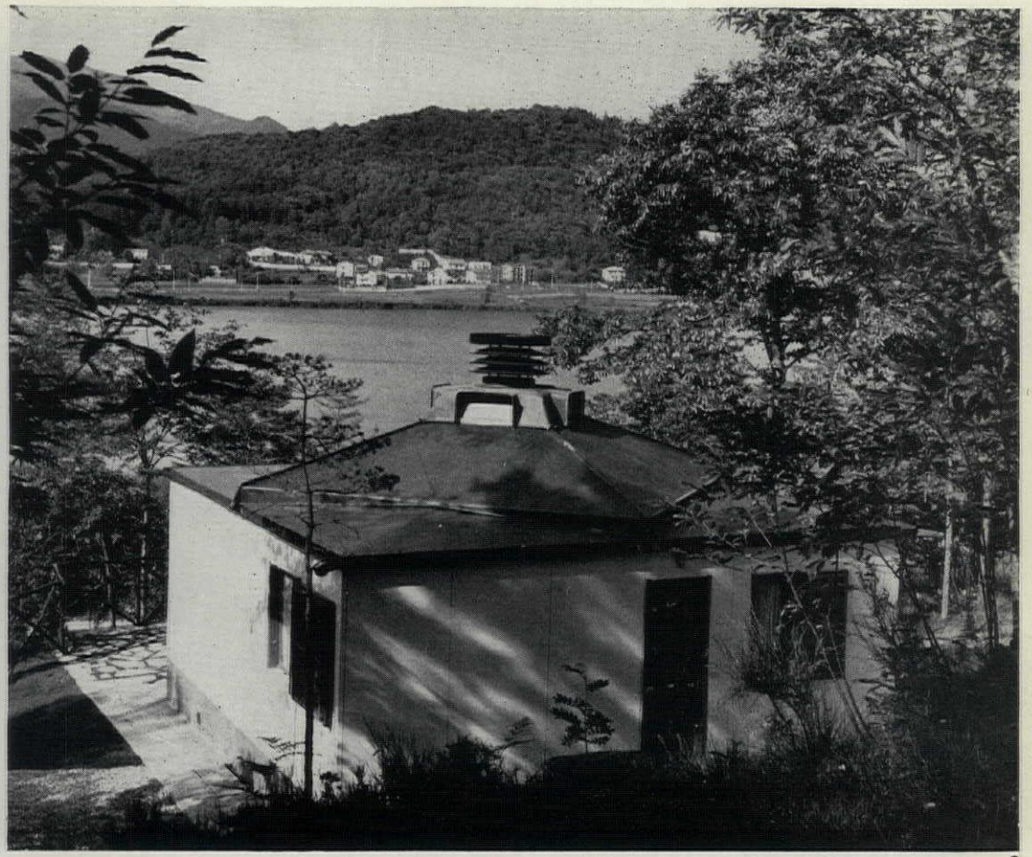
plan



elevation

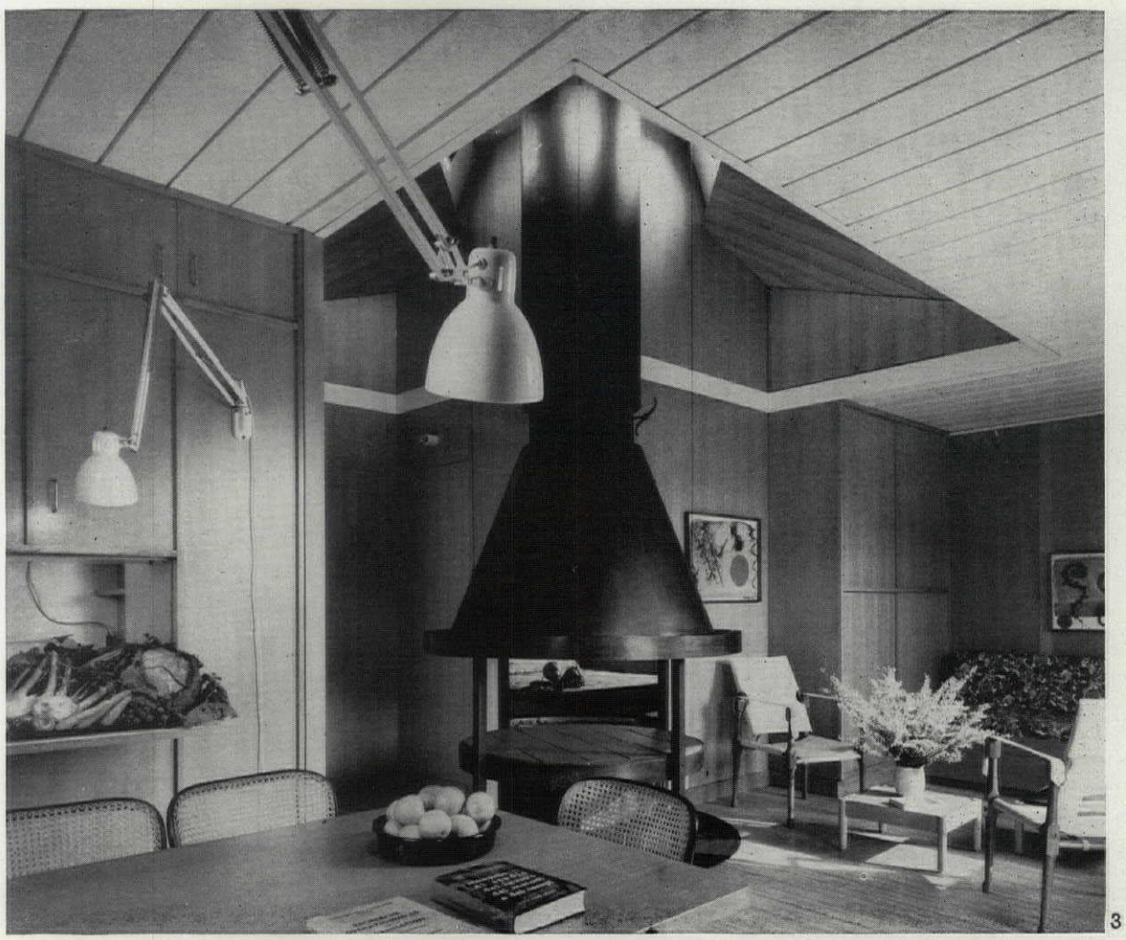
there are external shutters with movable louvres. The centre part of the living-space, surrounding the chimney, rises into the roof with a ceiling following the slope. Here there are high cupboards with pine veneered doors. The ceilings are of galvanized iron, painted with an insulation layer of rock-wool on top. Above the cupboards are four small ventilating windows that can be opened or closed from floor level.

1



2

1, one of the cottages in use in the woods, showing the entrance side with kitchen window. 2, another example on a lakeside site. 3, the interior, photographed from the dining area (sitting area on right), showing the fireplace disappearing into the roof-space. 4, the kitchen.



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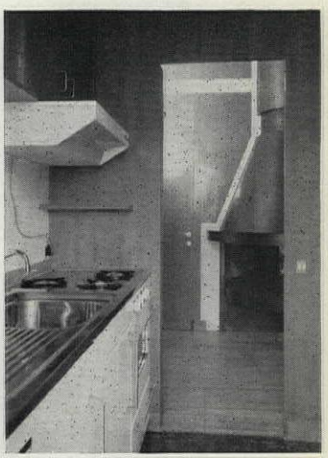

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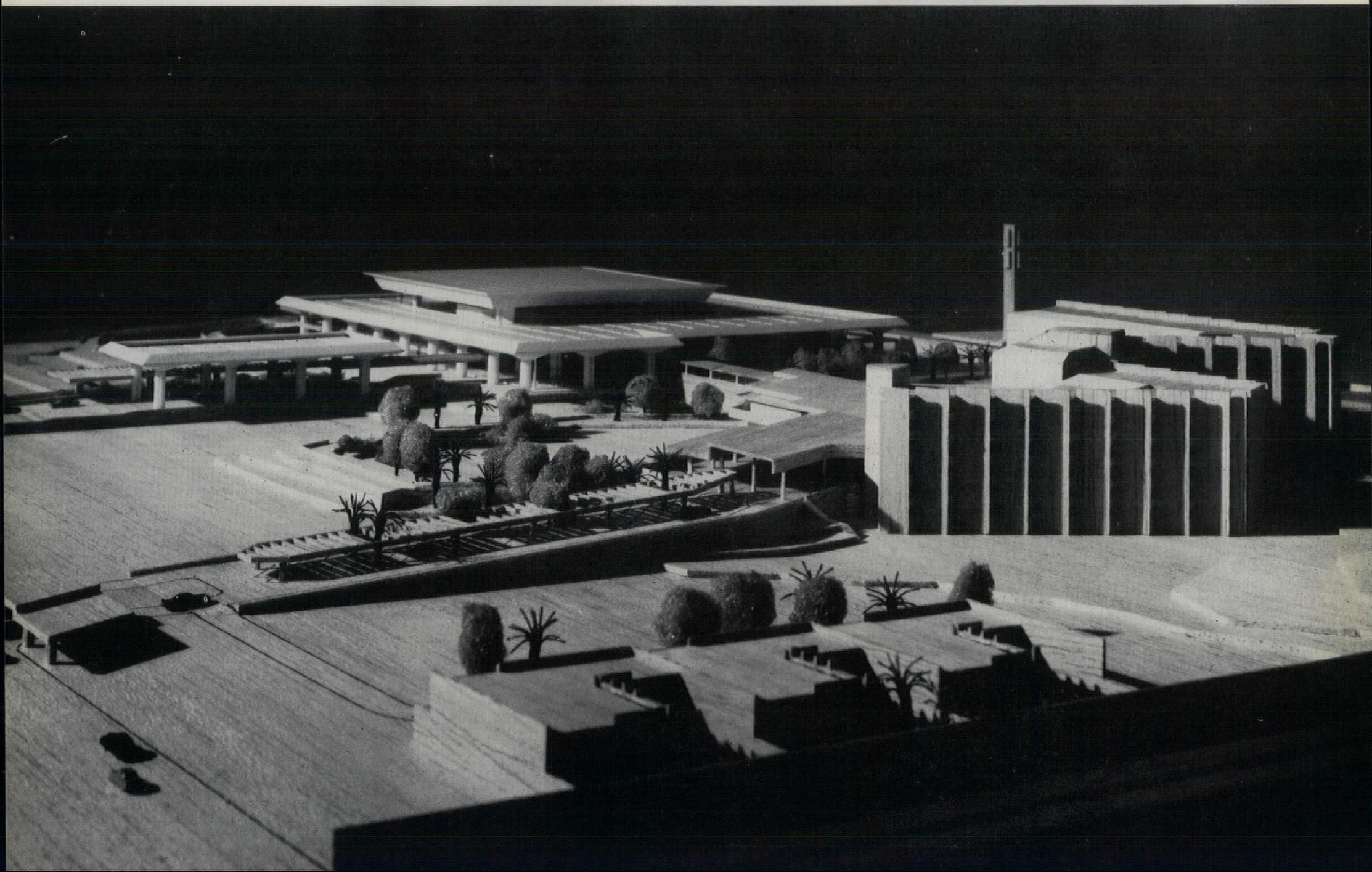
RIYADH



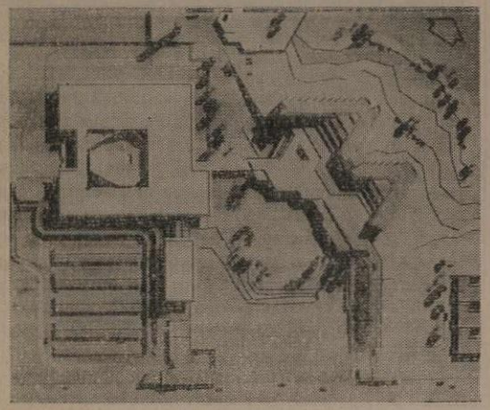
opposite: model from the east: the hotel is on the right, the conference centre beyond to the left, in the foreground are staff houses

preview

CONFERENCE CENTRE AND HOTEL AT RIYADH, SAUDI ARABIA

architect **TREVOR DANNATT**

This project, shortly to begin construction, is the outcome of a limited international architectural competition organized in 1966 by the International Union of Architects on behalf of the Saudi Government. Other participants included Sverre Fehn of Norway, Jausserand of France, de Carlo of Italy, Frei Otto of Germany and Kyriacopoulos of Greece.



model from above: the conference centre (with auditorium roof removed) is on the left and the hotel is on the right

The winning design by Trevor Dannatt was subsequently developed and revised and finally approved by King Feisal of Saudi Arabia during the course of his visit to London last year. The project, along with a parallel project in Mecca designed by Frei Otto and Rolf Gutbrod, is being supervised by a committee consisting of Mr. Bakr Khomais, Director of the Agency for Technical Co-operation Administration at Riyadh, Dr. Omar Azzam, UN Regional Adviser, Beirut, and the English architect Theo Crosby. The structural consultants for the Riyadh project are Ove Arup and Partners, and the Saudi Government have appointed Widnell and Trollope as quantity surveyors.

The Riyadh project consists of two closely related but architecturally differentiated buildings: a conference centre and an hotel. The conference centre, which, in the words of the competition conditions, 'is intended for national and international meetings and seminars and will in time become a cultural focus for the city of Riyadh,' comprises a hall with seating for 1,400 and with all technical facilities such as simultaneous translation, provision for television, etc., three meeting-rooms for 200 each, together with exhibition and refreshment areas at different levels and the necessary administrative and service spaces. A special VIP entrance area accessible by car and a VIP reception lounge complete the main accommodation. A large *porte cochere* breaks forward from the main front of the building to receive visitors arriving by car, and there is a link to the hotel. Provision is also being made for a mosque.

The brief called for a first-class hotel with 200 bedrooms (many of which are arranged *en suite* in various combinations), guest reception areas and lounges, a dining-room for 300, two private dining-rooms and the necessary supporting service accommodation. The site layout for the conference centre includes covered parking for 250 cars at a lower level. The access to the hotel is via a ramped roadway with central covered car-parking leading to the covered entrance. The service entrance for both buildings is at the rear and adjacent to this is the central plant-room also serving both buildings. Other site accommodation includes three staff villas and staff housing.

The conference centre is characterized by a formal, regular system of structure, providing large, free, internal, sun-protected spaces with the auditorium as the heart and other elements grouped round it. The hotel is characterized by the accretion of carefully orientated individual units (room, bathroom, patio) round a spacious internal hall space. There is therefore a contrast between the conference centre, geometrically placed on the site and spatially generous for assembly and interchange, and the more irregular form of the hotel that grows out of the site like a residential hill.

The internal organization of the conference centre follows the competition design, which was based on the concept of a main hall placed within a surrounding foyer-space planned on three levels. These are:

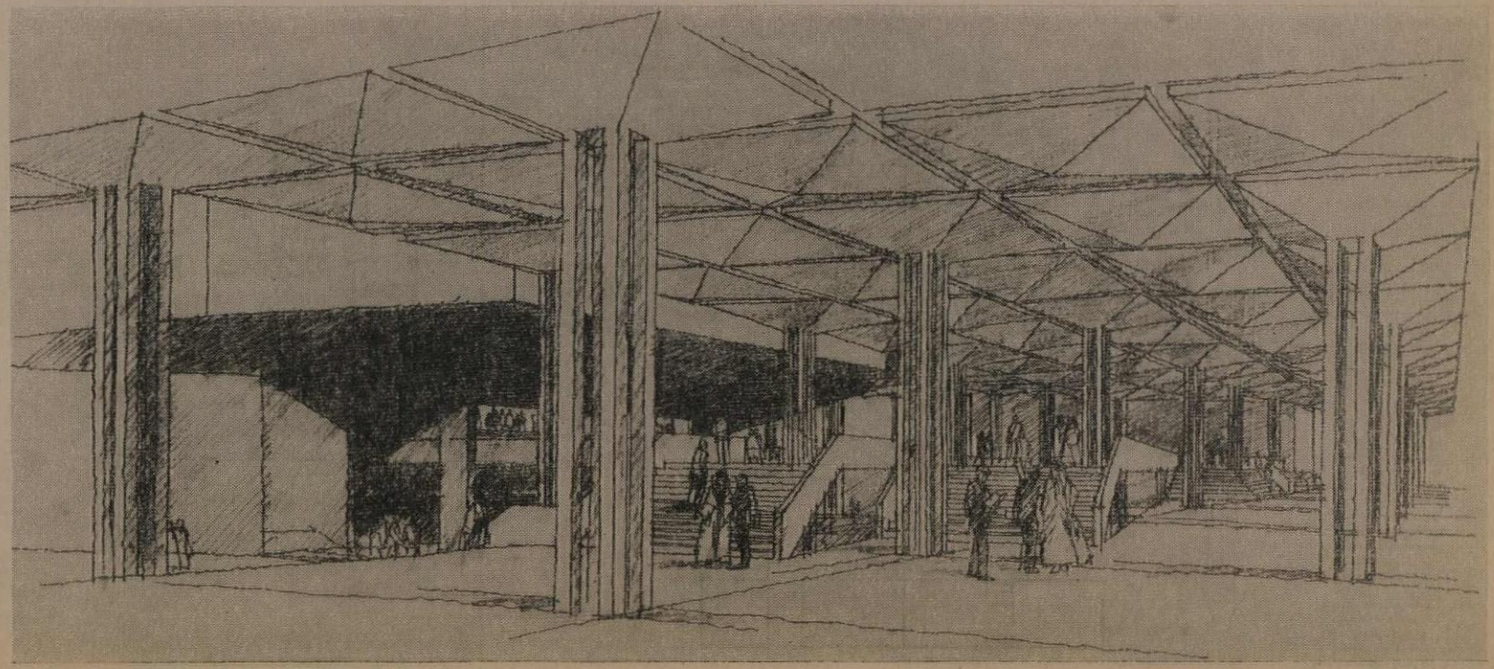
(i) An entrance level which opens into a general foyer and exhibition space extending for the full length of one side of the building.

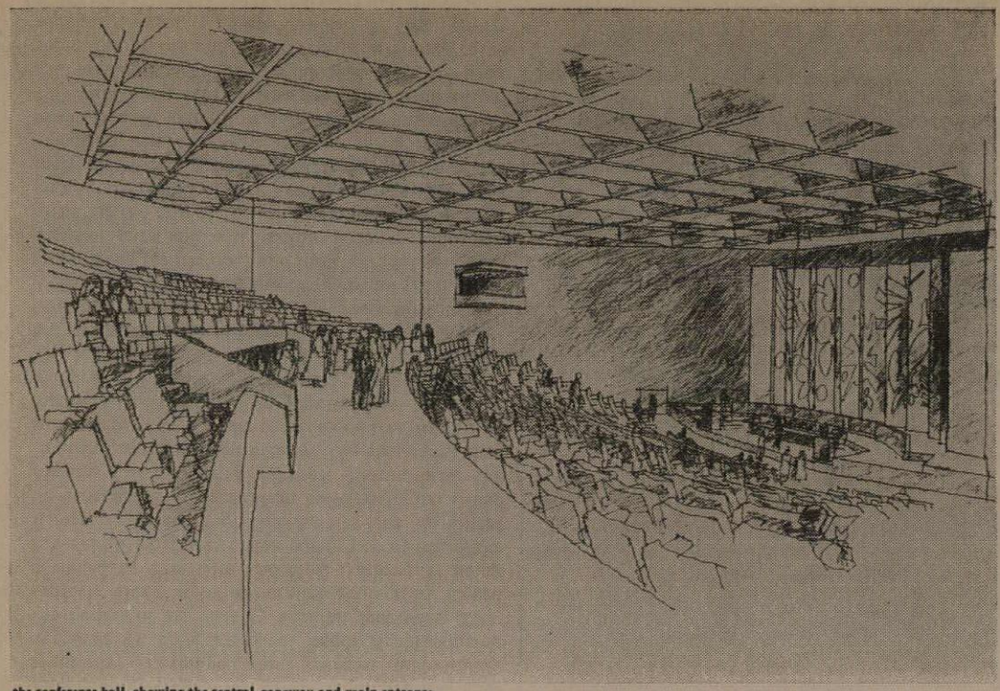
(ii) An upper level, reached by broad short flights of steps from the general foyer. From this level wide doorways lead into the middle of the main hall—this transition being designed as a major architectural experience apart from the value of an arrangement which enables participants to come together naturally before, at breaks in, and after sessions. The upper level extends beyond the hall to serve as foyer space to the committee rooms.

(iii) A lower level, reached by broad short flights of steps from the general foyer, or by direct stairs from the upper level. This area is planned as a general space which could include an area for exhibitions, related to the general foyer, as well as an area where tea, coffee and light refreshments could be served. Off this level are the principal toilets and service areas.

The hall space is square and covered by a two-way spanning concrete roof. The hall itself is set within this space and the enclosing shaped wall rises to within 3 ft. of the main ceiling, the gap being filled with heavy glazing. Thus there is effective spatial connection between the inside and outside of the hall through the overriding ceiling, which permits the penetration of natural light into the interior of both foyer and hall. For cinema and other uses, special blackout blinds can be drawn up from inside the enclosing wall of the auditorium. The presence of natural light in the centre of the building provides appropriate internal lighting for the foyer spaces. The ceiling of the hall is not a separate entity but integrates structure with ventilation and lighting, giving it more in common with church interiors than with those of modern commercial buildings like cinemas. In the hollow space between the coffered ceiling and the upper roof-slab, conditioned air will be distributed through metal ducting and there is overall access to all parts so that lighting and ventilation arrangements can be serviced without scaffold from below.

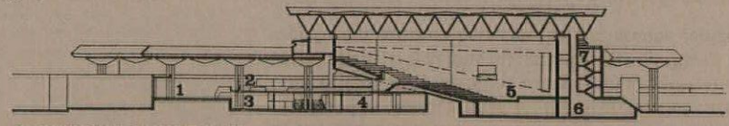
the foyer of the conference centre, looking from the entrance to the upper foyer which leads to the conference hall: the perspectives are by Denis Bailey



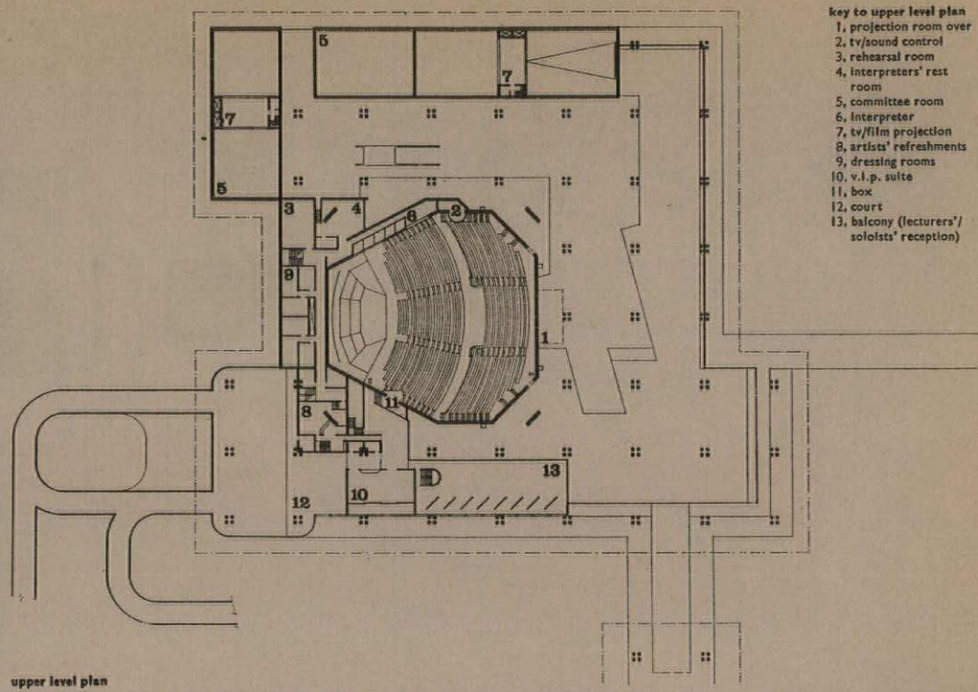


the conference hall, showing the central gangway and main entrance

key to section
1, general foyer
2, upper foyer
3, lower foyer
4, refreshment service
5, stage
6, plant
7, escape

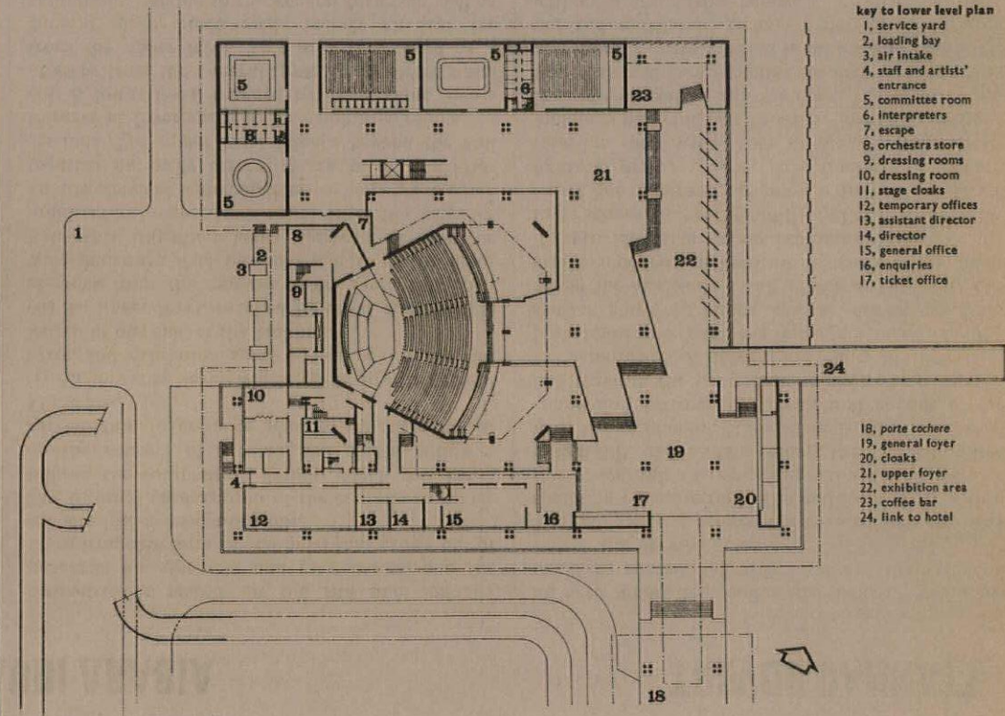


long section through conference hall



key to upper level plan
1, projection room over
2, tv/sound control
3, rehearsal room
4, interpreters' rest room
5, committee room
6, interpreter
7, tv/film projection
8, artists' refreshments
9, dressing rooms
10, v.i.p. suite
11, box
12, court
13, balcony (lecturers'/ soloists' reception)

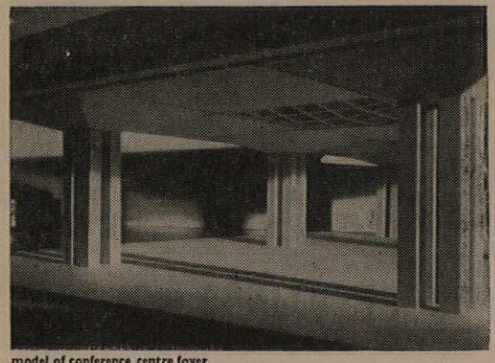
upper level plan



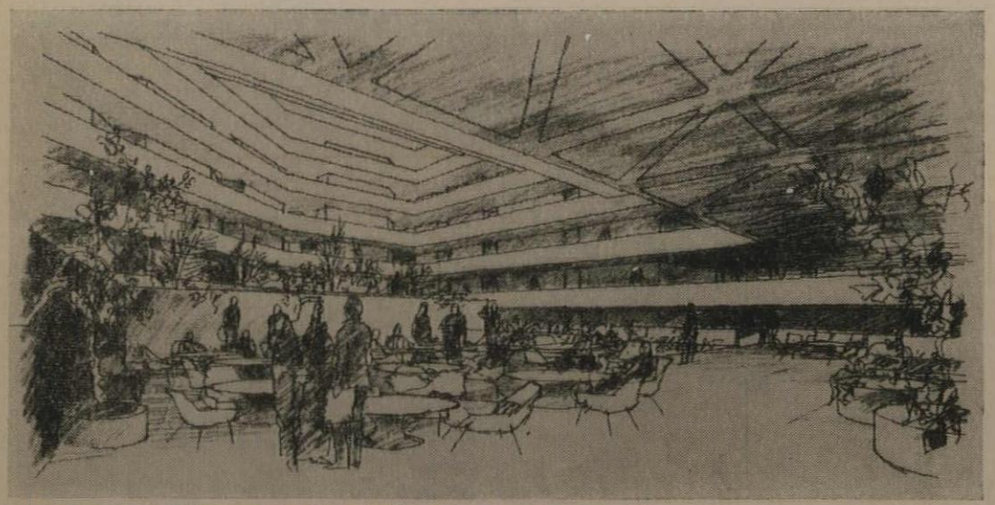
key to lower level plan
1, service yard
2, loading bay
3, air intake
4, staff and artists' entrance
5, committee room
6, interpreters
7, escape
8, orchestra store
9, dressing rooms
10, dressing room
11, stage cloaks
12, temporary offices
13, assistant director
14, director
15, general office
16, enquiries
17, ticket office
18, *porte cochere*
19, general foyer
20, cloaks
21, upper foyer
22, exhibition area
23, coffee bar
24, link to hotel

lower level plan of conference centre

The following were the principal factors determining the design of the hotel:
(i) A desire to avoid the faceless pattern of 'International Hotel' which is encountered throughout the world and to create an indigenous building of unique character.
(ii) To arrange bedrooms well protected from the sun and with maximum privacy, at the same time providing generous approaches, lounges and other common space, and the maximum separation of service areas.
(iii) To bring guests arriving by car straight to the entrance, and to have a large percentage of private rooms situated within one or two storeys' reach. To separate service deliveries from guests.
The bedrooms face on to private patios, which themselves face away from the sun. There are no internal corridors, and bedrooms are entered off galleries which overlook the covered courtyards formed within the arms of the bedroom wings. The drive-in to the hotel leads to the entrance area at first-floor level, which is canopied over for sun protection. From this the foyer is entered, the same entrance being also used for visitors to the restaurant only. The open galleries overlooking the courts that rise up through the full height of the building, by which all rooms are approached, also contain various amenities; for instance, at second floor level there is a residents' lounge overlooking the entrance, and just above first floor level, in the larger court, is the residents' principal lounge, placed to take advantage of the open space of the court and the view to the rear of the main court, where at a slightly lower level there is an internal garden with fountains. The access



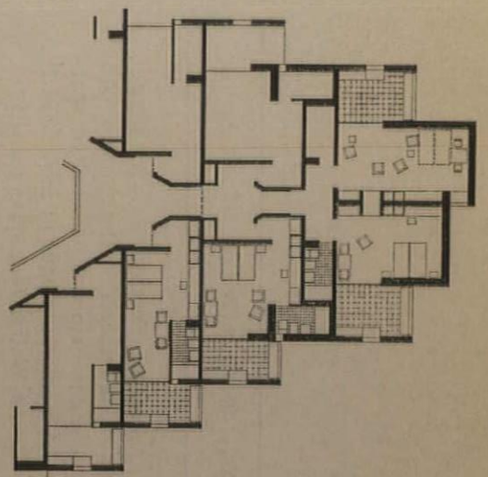
model of conference centre foyer



residents' lounge and principal courtyard of the hotel, overlooked by the bedroom access galleries

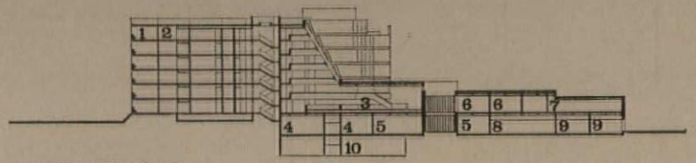
balconies to bedrooms run round this space. In the smaller court at entrance level is the general lounge. This is less private than the other two, and could be used by visitors waiting, as well as by guests.

These lounges set in courts, with their galleries at different levels, are the characteristic feature of the hotel building. They are equivalent to outside space, closed, sun-shielded, restful intermediate zones between private rooms and the outside, providing the luxury of architectural space rarely found in a modern hotel. The administrative offices are placed next to the lounge, with easy access from the main foyer, but quite private. To the left of the entrance is the stair down to the restaurant level and adjacent is a walkway which extends through as the link between the hotel and the conference centre. Either side of this, at the hotel end, space has been provided for small shops, and an area has been allocated for a light meals restaurant (breakfasts, snacks, etc.) which is thought to be a desirable feature in this type of hotel.

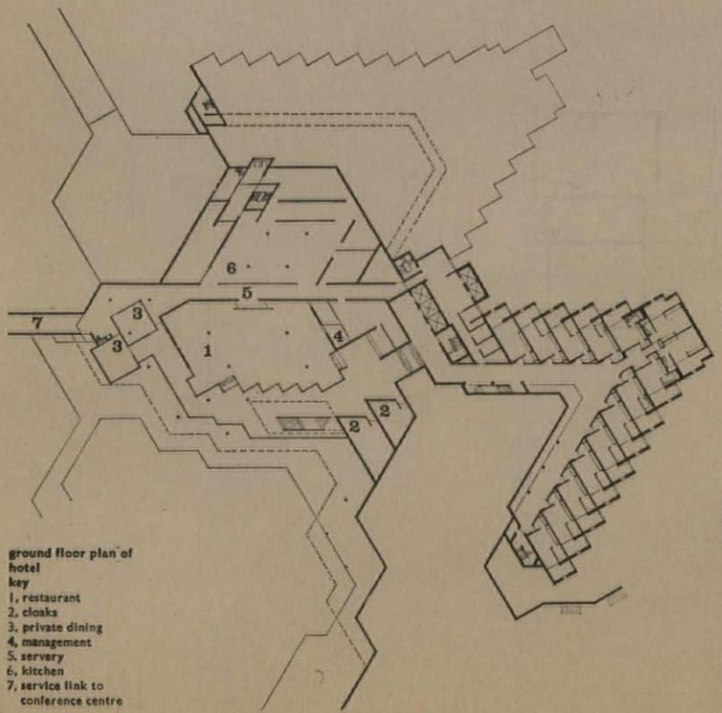


plan of standard rooms and suiting rooms

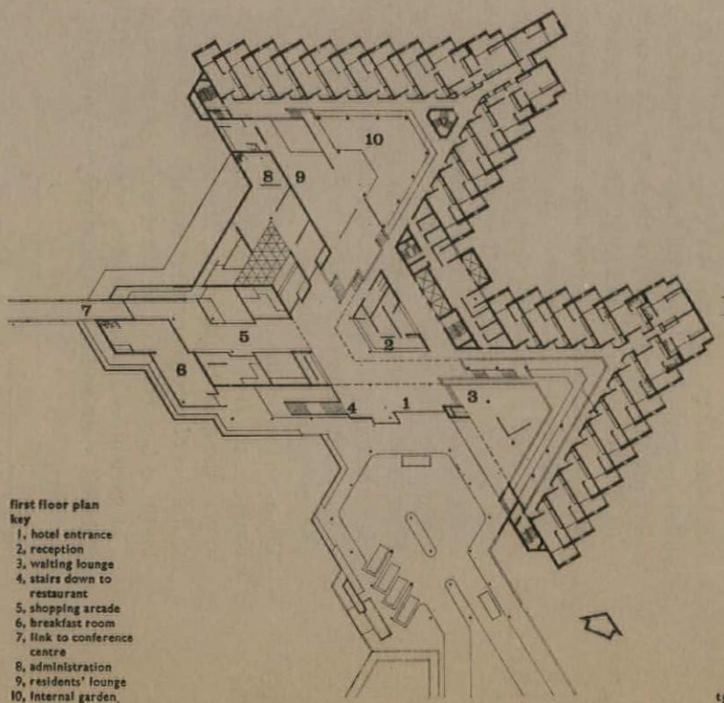
key to section
1, patio
2, sitting room
3, lounge
4, staff
5, servery
6, administration
7, breakfast room
8, restaurant
9, private dining
10, plant



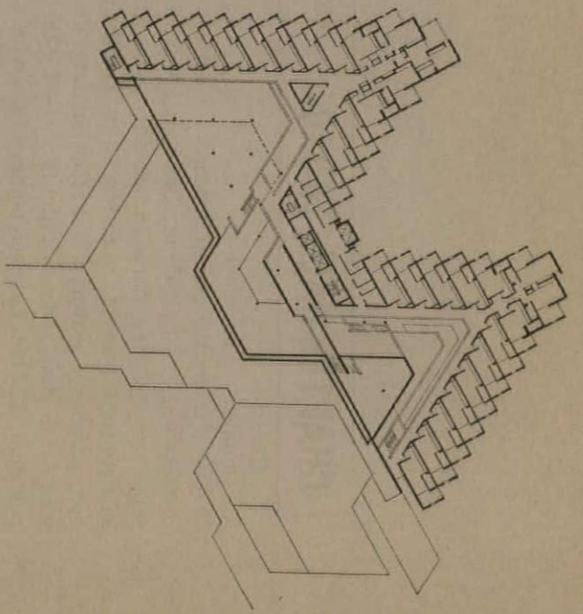
cross section through hotel



ground floor plan of hotel
key
1, restaurant
2, cloaks
3, private dining
4, management
5, servery
6, kitchen
7, service link to conference centre



first floor plan
key
1, hotel entrance
2, reception
3, waiting lounge
4, stairs down to restaurant
5, shopping arcade
6, breakfast room
7, link to conference centre
8, administration
9, residents' lounge
10, internal garden

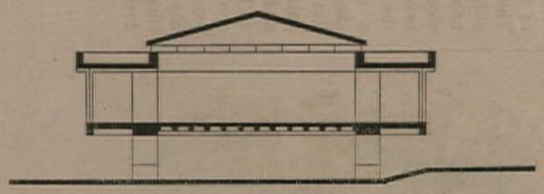


typical upper floor plan

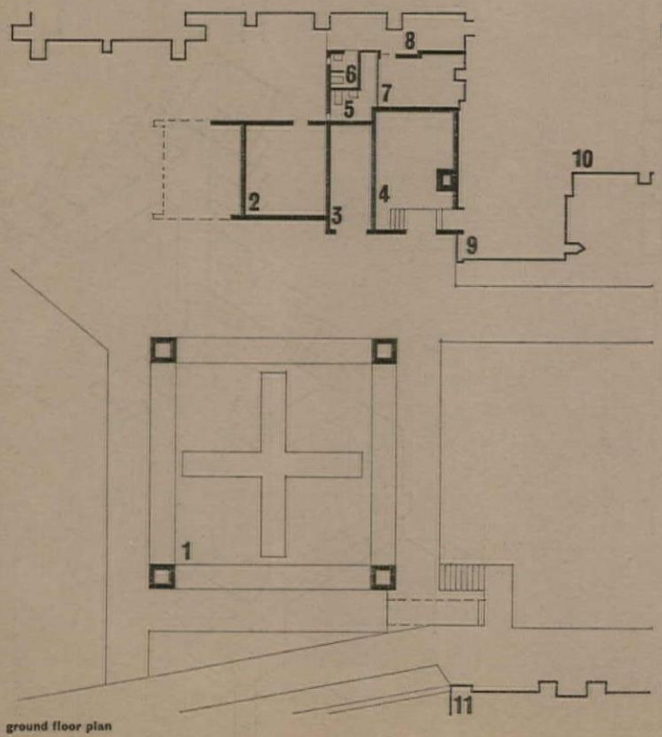
CHAPTER HALL, TRURO | *architect* JOHN TAYLOR | *photographs by Tom Molland*

This addition to the north-east side of the cathedral (between it and the cathedral school) comprises a memorial hall seating 350 persons, together with a small servery, chair stores and cloakrooms, a small sacristy for the use of the Sisters of the Epiphany, a boiler-room for heating the chapter buildings and the whole cathedral, and new toilet facilities for the clergy and choir. The hall has been planned for a wide variety of functions and the internal space can be utilized in many different ways. The floor-level has been determined by following through the level of the nave of the cathedral —i.e. 7ft.-8ft. above ground level. The building has, therefore, been raised on four massive granite-faced piers echoing the buttresses of the cathedral and leaving uninterrupted the view from end to end of the close. The main hall sits on these piers with cantilevered aisles on each side, one aisle accommodating the dais and another the servery. The other two can be closed off for smaller committee meetings. Direct access to the cathedral is obtained through the small doorway in the north transept provided in Pearson's original design for this very purpose.

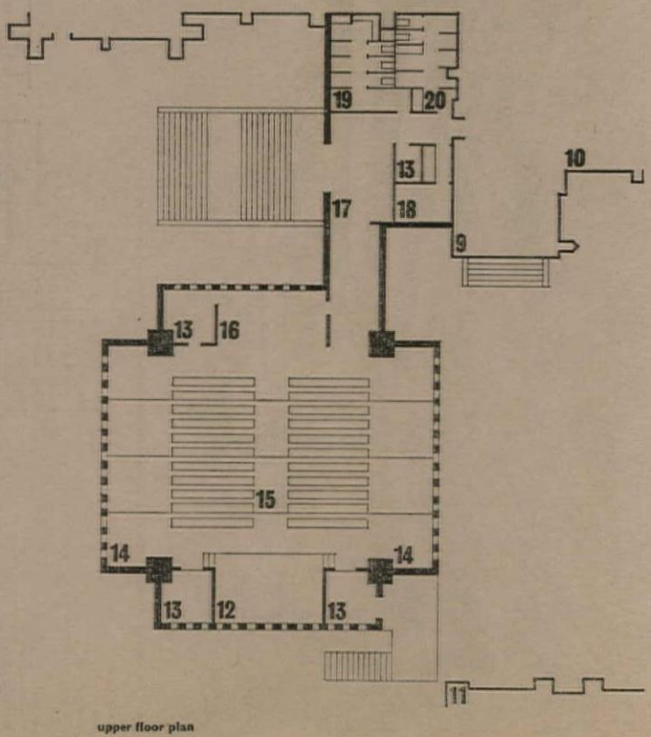
The structure of the new Chapter Hall is of reinforced concrete, the face of which has been grit blasted to expose the granite aggregate. The main external wall surface is of reconstructed stonework with a rough textured face coloured to blend with the cathedral. The pyramid-shaped roofs are covered with Cornish Delabole slate and the shape is reflected internally with a sloping pine ceiling. Delabole slate has been used again as a flooring material in the entrance-hall; elsewhere the flooring is mainly of teak, matching the teak-faced doors. A memorial plaque in the entrance hall, carved by Messrs. Walter Jenkins in polished Bianco Del Mare marble, is dedicated to the memory of 'John Townshend 2nd Lord St. Leven and Edith Hilaria, his wife, daughter of the Earl of Mount Edgcumbe, Lord Lieutenant of Cornwall and Chairman of the Building Committee of Truro Cathedral.' The new building was donated by their daughters and opened exactly a hundred years after their parents had laid the foundation stone of the cathedral. Associate in charge, W. P. Rookley. Job architect, J. C. Kirk. Consultant, John Phillips (Surveyor to the Fabric of Truro Cathedral). Structural and heating engineers, Anthony Masters and Associates. Quantity surveyors, Bailey and Ward. For contractors see page 168.



cross section



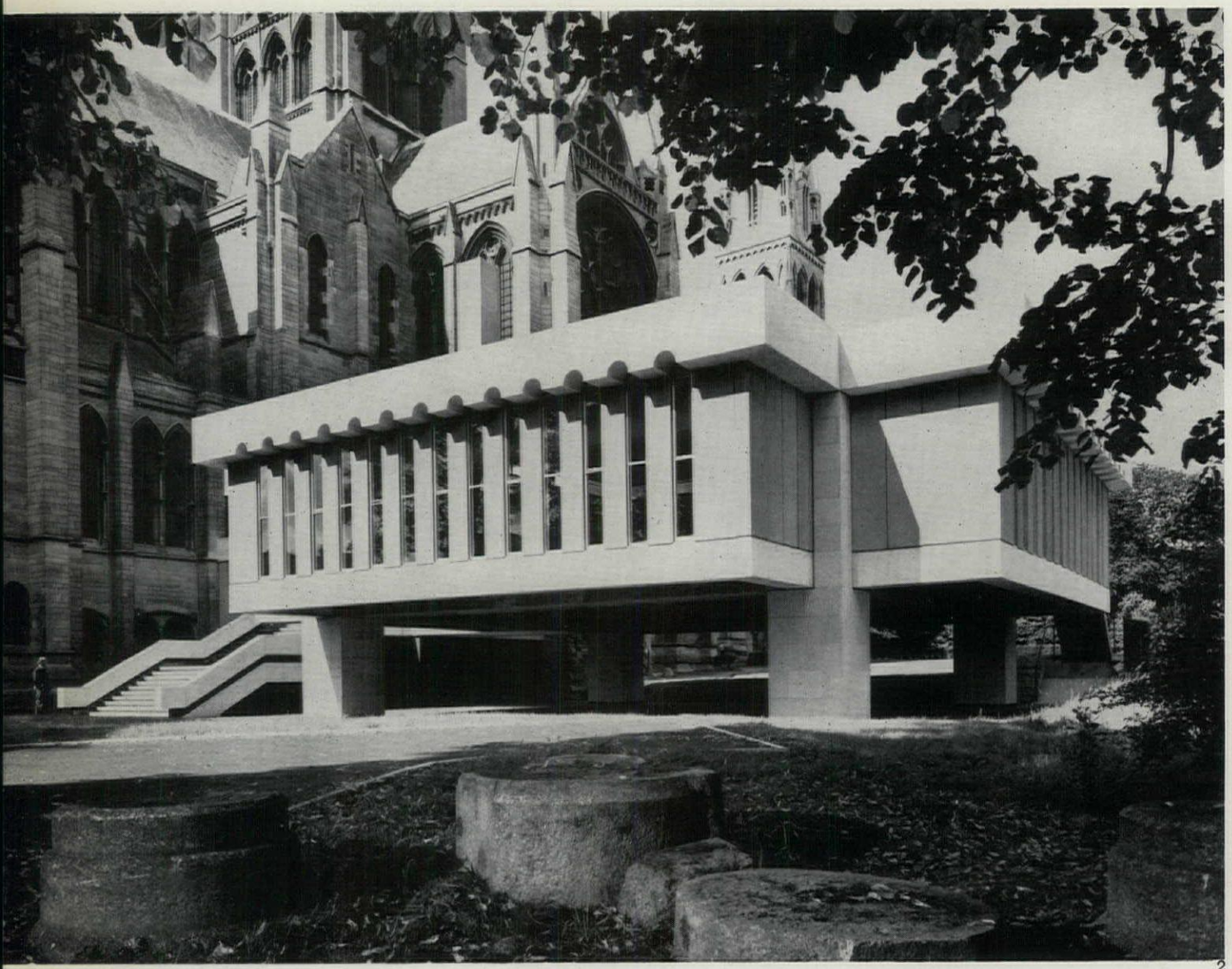
ground floor plan



upper floor plan

key
1. chapter hall
2. tank room
3. plant
4. boiler
5. boys' w.c
6. men's w.c
7. store
8. area
9. north porch
10. cathedral
11. cathedral school
12. dais
13. store
14. aisle
15. main hall
16. servery
17. entrance lobby
18. sacristy
19. male cloaks
20. female cloaks

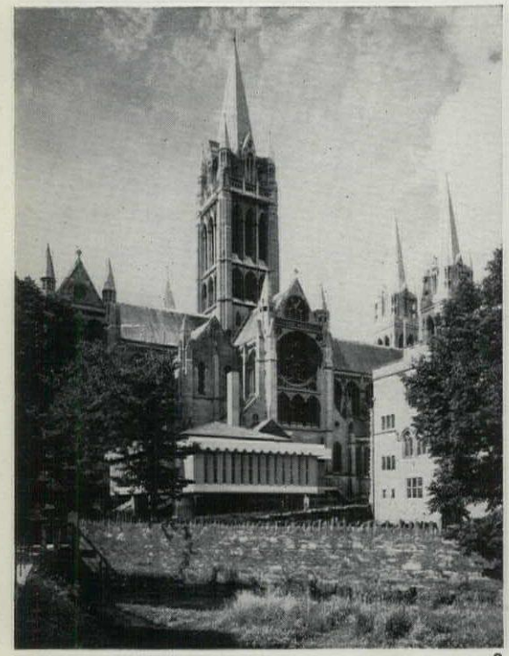
1, new chapter hall adjoining the north transept of Truro Cathedral: the entrance side.



2

CHAPTER HALL, TRURO

2, from the north-east, showing the building elevated to give it the same floor-level as the cathedral. 3, distant view from the north; cathedral school on right. 4, inside the hall, showing the pine boarded ceiling that follows the slope of the low-pitch roof and the combination of vertical and clerestory windows.



3

4

Richard C. MacCormac

THE ANATOMY OF WRIGHT'S AESTHETIC

Frank Lloyd Wright's acknowledgment of his kindergarten experience and the outward resemblance between his buildings and the illustrations of the 'gifts' in the Froebel manual[1] are already well known (see Grant Manson's 'Wright in the Nursery,' AR, June, 1953). Though remarkable, these comparisons did little more than indicate the source of Wright's characteristic 'style.' Closer investigation—at the level of intention and organization rather than simply of appearance—suggests that the kindergarten was of a much more radical significance for Wright, that it provided him with a philosophy and with a design discipline to realize his architecture.

Froebel did not intend his patterns merely to have aesthetic appeal. He conceived them as the instrument of a system of education based upon a pantheistic conception of nature. The aim of this was two-fold, intellectual and spiritual; an understanding of Natural Law would simultaneously develop the powers of reason and convey a sense of the harmony and order of God: 'God's works reflect the logic of his spirit and human education cannot do anything better than imitate the logic of nature.'

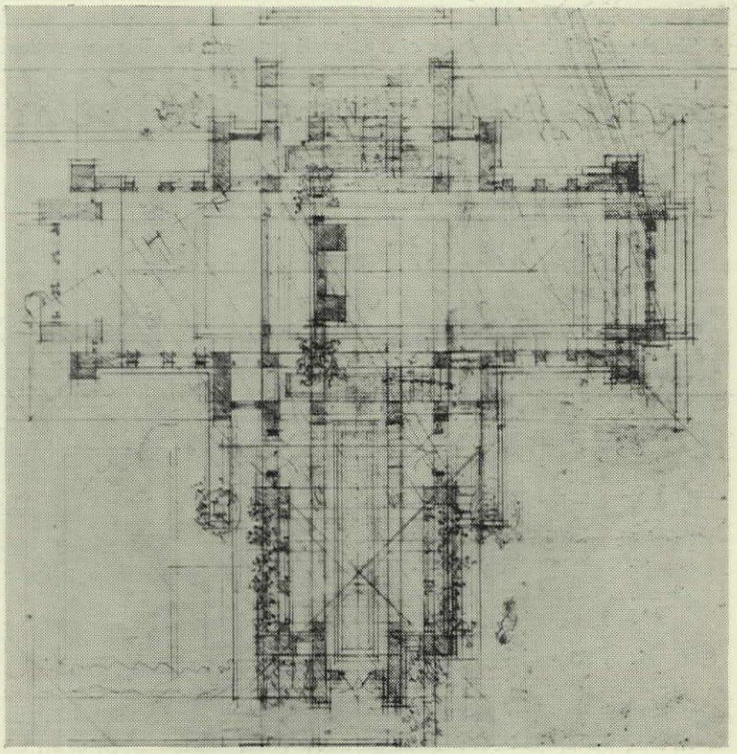
Froebel identified the governing force of nature as 'the Divine principle of Unity' and found a medium for conveying this metaphysical ideal during his study of crystallography (he studied several natural sciences in an effort to substantiate his preconceptions). The geometry of crystallography, which he supposed was typical of the structure of all matter, became the basis of the patterns in the kindergarten handbooks.[2] The Froebel gifts were presented to children as sets of wooden blocks packed in cubic boxes and accompanied by a text describing the purpose of each. By modern standards, the requirements of the manual are extraordinarily strict. The theme of unity becomes a moral discipline; only complete symmetrical patterns are allowed, and the child is encouraged to feel that their pleasing effect is a reward for respecting 'order . . . Heaven's first law' while 'capriciousness' and 'arbitrariness' are condemned as being against nature.

Such a discipline must have made a deep impression upon Wright. It presented him with a comprehensive vision in which aesthetics were inseparable from universal principles of form. In the light of such an inheritance we may appreciate his extraordinary confidence in the absolute validity of his architecture as an expression of Natural Law and his almost messianic belief in his role as an architect. The extent to which he was indeed affected becomes apparent if one compares extracts from the text of the manual and examples from the exercises with some of his own characteristic statements.

'The child is first taught to take the cube out of the box undivided in order to inculcate alike the sense of order and the idea of completeness. . . . In life we find no isolation. One part of the cube, therefore, must never be left apart from or without relation to the whole. The child will thus become accustomed to treating all things in life as bearing a certain relation to one another.'

'Any building should be complete,' said Wright, 'including all within itself. Instead of many things one thing. . . . Perfect correlation, integration is life. It is the first principle of any growth that the thing grown be no mere aggregation . . . and integration means that no part of anything is of any great value except as it be integrate part of the harmonious whole.'

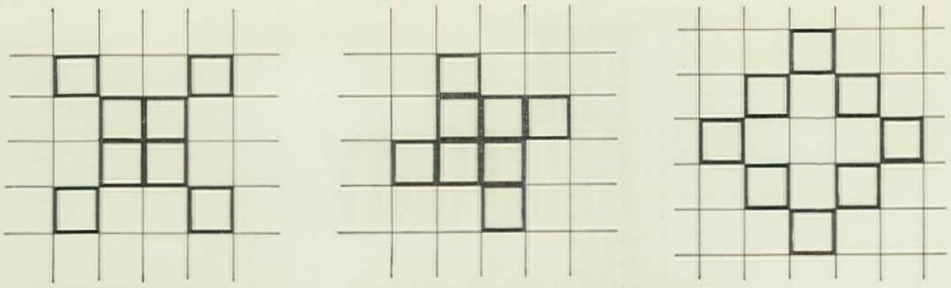
In each of the Froebel patterns the parts have to some extent surrendered their identity to the whole to which they contribute—see diagram 2, overleaf. For Wright this was a basic recognition; parts added, porches, verandahs and balconies, should not be sensed as additional but should seem intrinsic, as extensions of inner structure. To help the child arrange the blocks, the kindergartener could provide a table-top ruled with a grid.[3] The discipline of a grid, combined with modular components, engenders the kind of correlation described. Wright appreciated this in his own planning: 'What we call standardization is seen to be fundamental groundwork in architecture. All things in nature exhibit this tendency to crystallize. . . . The kindergarten training, as I have shown, proved an unforeseen asset . . . a properly proportional unit system kept all to scale like a tapestry, a consistent fabric of interdependent related units, however various.'



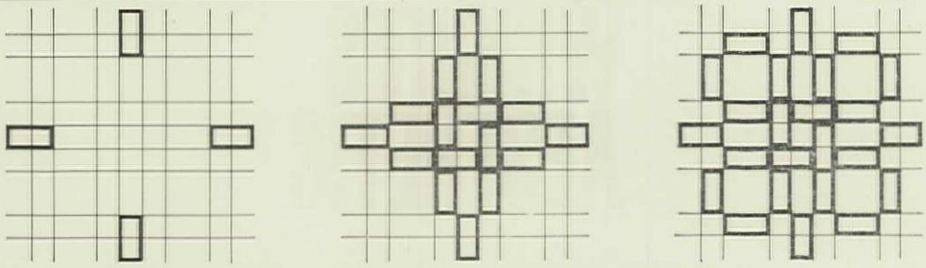
1, 'his sketch plans are matted with exploratory lines.'

Given these disciplines, T-square and set-square were the obvious tools of Wright's aesthetic. It is characteristic of his sketch-plans that they are matted with exploratory lines—a mesh refined and tightened to correlate appropriate parts, 1. 'This principle of design was natural, inevitable for me. It is based on the straight line technique of T-square and triangle. It was inherent in the Froebel system of kindergarten training given to me by my mother.'

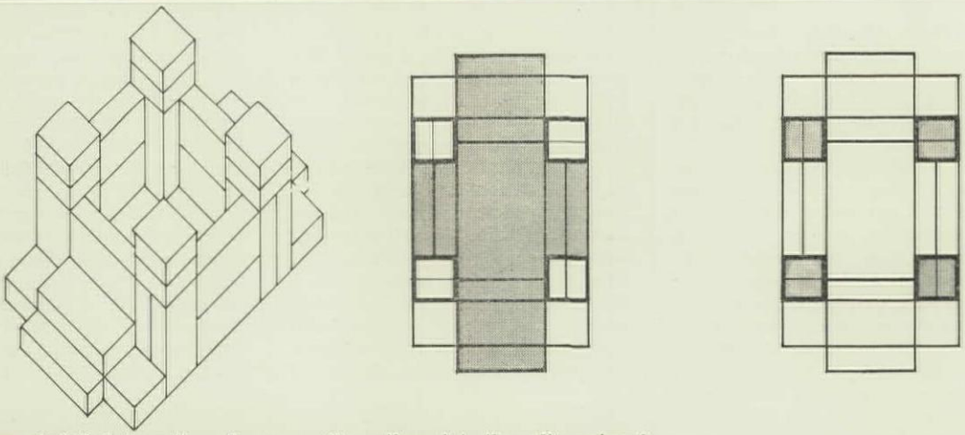
Some of the exercises are composed with rectangular blocks rather than cubes, and these set up a tartan, rather than an even, modular grid. A typical pattern, 3, consists of two interpenetrating cruciforms breaking through a square, establishing an inter-dependence of interior structure and external shape comparable to that in Wright's work. In fact it is surprising to find Froebel anticipating one of Wright's most fundamental propositions; for the handbook claims that the gifts 'enable the child to strive after the comprehension of both external



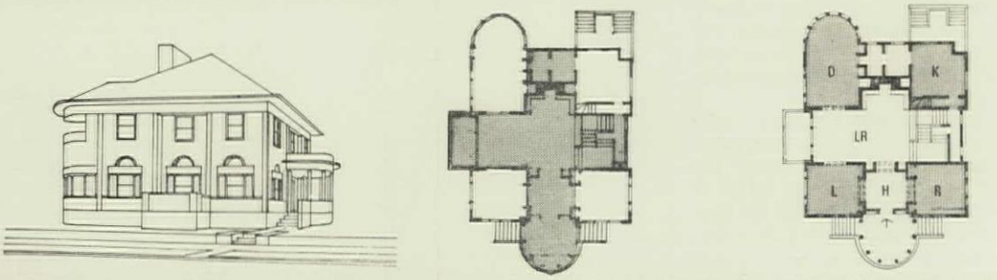
2, 'In the Froebel patterns the parts have . . . surrendered their identity to the whole.'



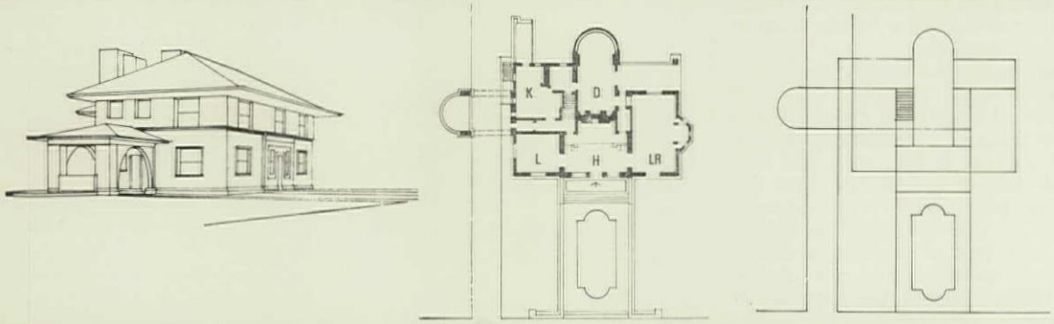
3, 'A typical pattern consists of two interpenetrating cruciforms breaking through a square.'



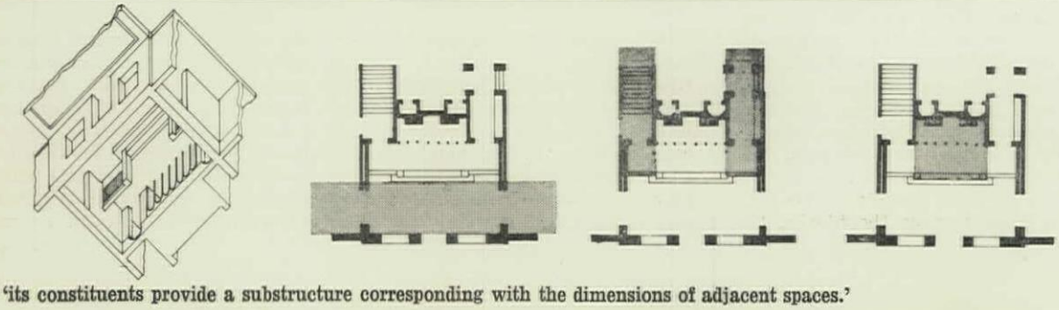
4, 'the characteristic intersection of square and cruciform into three dimensions.'



5, 'The plan of the George Blossom house (1892) is . . . analogous to the intersecting squares and cruciforms of the patterns.'



6, 'In comparison, the front and side elevations of the Winslow house of the following year, are far less explicit.'

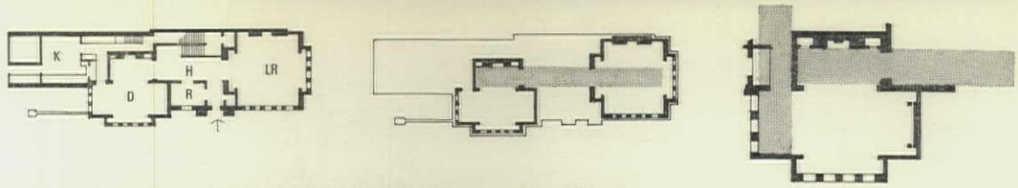


7, 'its constituents provide a substructure corresponding with the dimensions of adjacent spaces.'

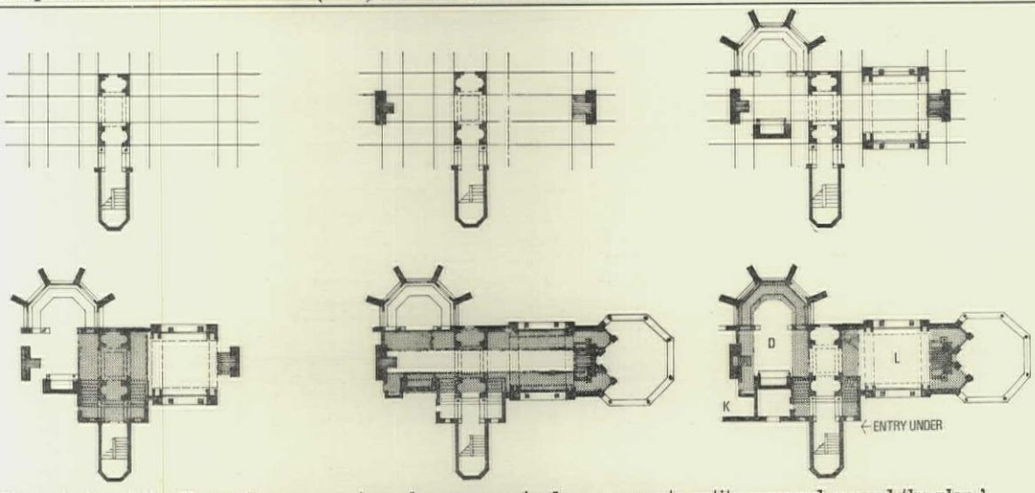
appearances and inner conditions' and emphasizes that the outward shape of the patterns is conditioned by the geometry of the whole. Similarly, the exterior forms of Wright's buildings usually project internal spaces, the precedent of the Froebel exercises suggesting that he started from a geometric premise rather than from some personal spatial insight: 'This sense of the within, or of the room itself, or of the rooms themselves, I now saw as the great thing to be expressed as architecture. This sense of interior space, made exterior as architecture, transcended all that had gone before. . . . Hitherto all classical or ancient buildings had been great masses or blocks of building material sculpted into shape outside and hollowed out to live in.'

Comparisons of this kind, between flat patterns and architecture, must take into consideration the perceptual difference between seeing the whole pattern from above and grasping the overall form of a building from its perimeter. Wright understood this problem when he wrote, 'I have endeavoured to establish a harmonious relationship between ground plan and elevation of these buildings, considering the one as a solution and the other as an expression. . . .' This is aptly illustrated by one of the models in the manual, which is an alternative to the flat patterns. The rather unbelievable 'bath,' 4, translates the characteristic intersection of square and cruciform into three dimensions. The overall structure is conveyed by the elevational distinction between the two figures; the interplay of steps and podium at each end depend upon a similar expression.

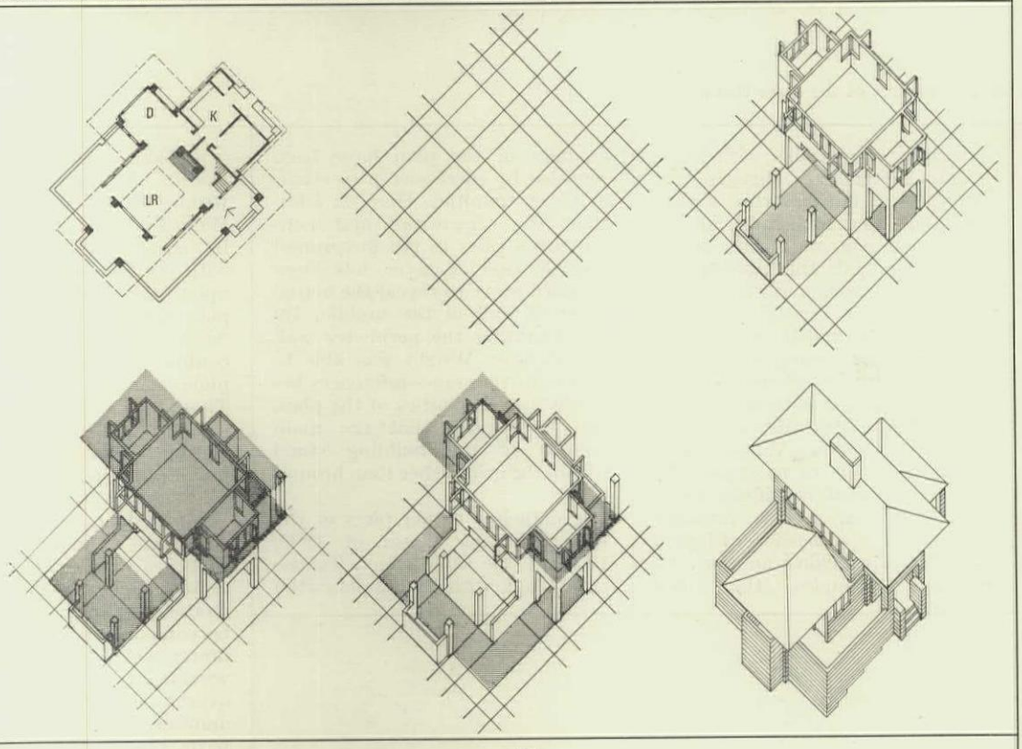
The approach to Wright's Prairie houses, which follows, has been developed from the preceding analyses. The evolution of typical features of the period, the overhanging roofs, the podia and the projecting cubic forms, is considered as an extension of the kindergarten system rather than simply the invention of a personal idiom. Wright's architecture, often supposed the most impervious to formal analysis, reveals a surprising geometric rigour. The plan, 5, of the George Blossom house of 1892 is, for example, obviously analogous to the intersecting squares and cruciforms of the patterns. Elevationally the plan is conveyed by the recessed central bays, which suggest that the entrance porch and balcony are extensions of the plan rather than additions. In comparison, the front and side elevations of the Winslow house of the following year, 6, are far less explicit. They obscure the grid extending through them, making no response to the main entrance and *porte cochère*. In this respect, the august exterior of the Winslow house seems to have made little contribution to the main stream of Wright's development. The interior, on the other hand, heralds his future spatial technique. At the centre of the house the entrance hall, a deceptively simple box, is



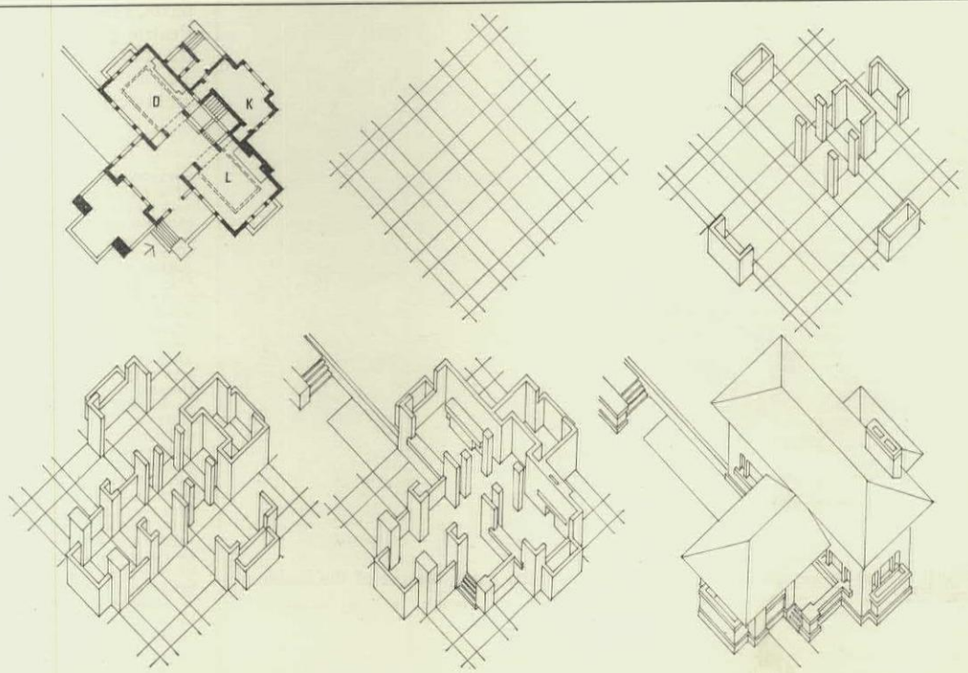
8, 'The plan of the Isidor Heller house (1897) is similarly conditioned.'



9, 'The exterior of the Husser house . . . is no longer conceived as a separate entity wrapped around the plan.'



10, 'From the plan of the Charles S. Ross house of 1902 it is possible to abstract a perfect tartan.'



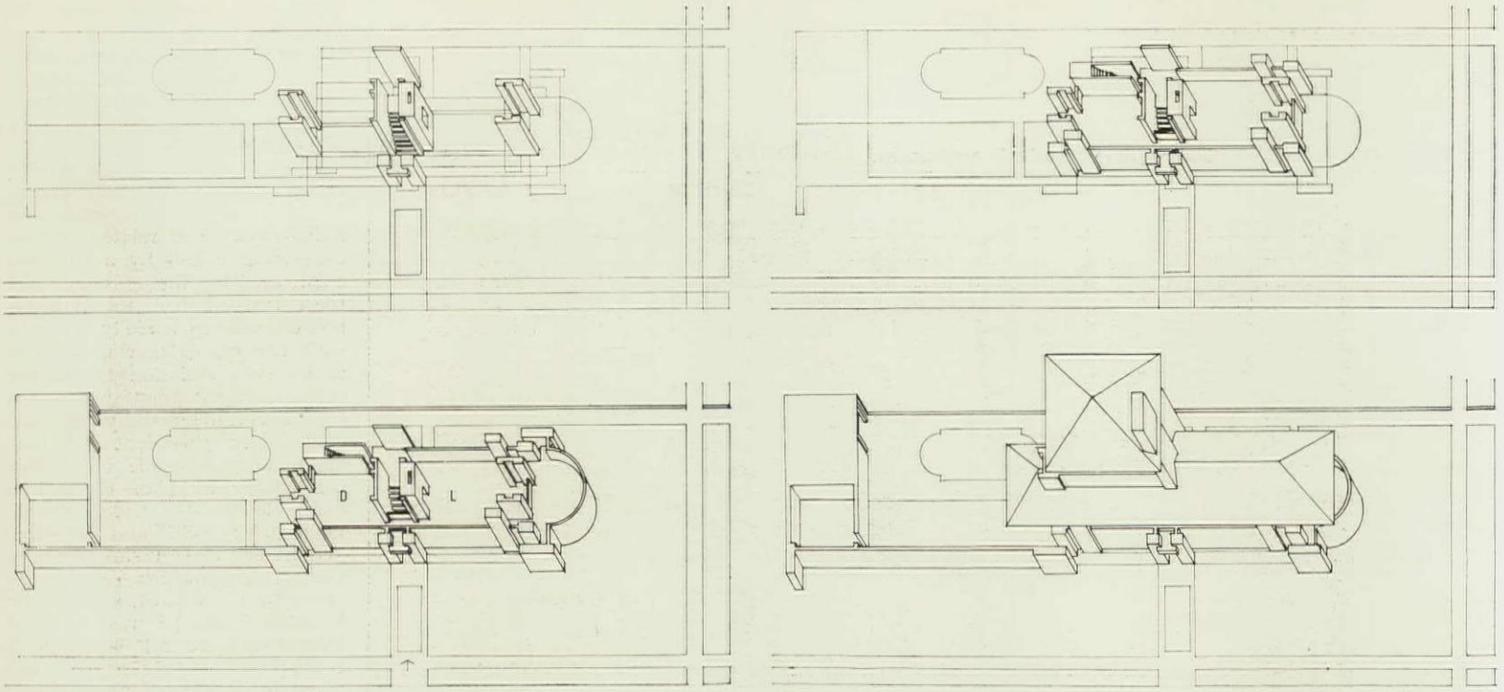
11, 'The same grid underlies the little Barton house of the following year.'

ingeniously integrated with the rooms to which it gives access. Its constituents—fireplace, doorways, balustrades and steps—provide a substructure corresponding with the dimensions of adjacent spaces, 7.

The plan of the Isidor Heller house (1897) is similarly conditioned. Here the dining-room and living-room are related across the entrance hall by a common axis, 8. The dining-room, like the entrance-hall of the Winslow house, is substructured to integrate with the spaces serving it. The access slots and dining area are consequently distinguished and a served-servant hierarchy suggested —an early precedent for that currently fashionable idea. This subdivision in plan enabled a distinction to be made between loadbearing wall and window. Wright had been dissatisfied with the windows which simply appeared as holes in the walls of the Winslow house ('I used to gloat over the beautiful buildings I could build if only it were unnecessary to cut windows in them.') Here the position of the windows is determined and they express the cruciform organization of the plan—a step towards the complete interdependence of exterior and plan in the living area of the Joseph W. Husser house, two years later. The exterior of the Husser house, 9, is in this respect the antithesis of the front elevations of the Winslow house. No longer conceived as a separate entity wrapped around the plan, it is the product of the various components which make up the interlocking volumes of the interior; this is the crux of the idea which Wright's architecture inherited from the kindergarten.

It will be seen that the Husser house is developed from an underlying grid. From the plan of the Charles S. Ross house of 1902 it is possible to abstract a perfect tartan, 10, and from this the volumes of the building can be projected exactly, in the same way as in the case of the Froebel bath. The predominant figure is a cruciform with another contained within it, comparable with the Froebel cruciforms on a tartan grid, 3. This kind of figure was to be the basis of most of Wright's later houses. In this example, the inner cruciform is expressed with porches and balconies and the outer with the roofs, which are extended geometrically from the main cube of the house. The raised portion of the living-room ceiling and bedroom casements also correspond with the inner grid. The podium further develops the theme of modules contained one within another by expressing a yet wider module, which is related to the volume it surrounds as the eaves are to the volumes beneath them.

The same grid underlies the little Barton house of the following year, 11, distinguished by a more consistent structural discipline which perhaps reflects Wright's preoccupation with the large-scale structure of the Larkin Building at this time. The plan is again composed of crosses, one within another, the exterior walls and

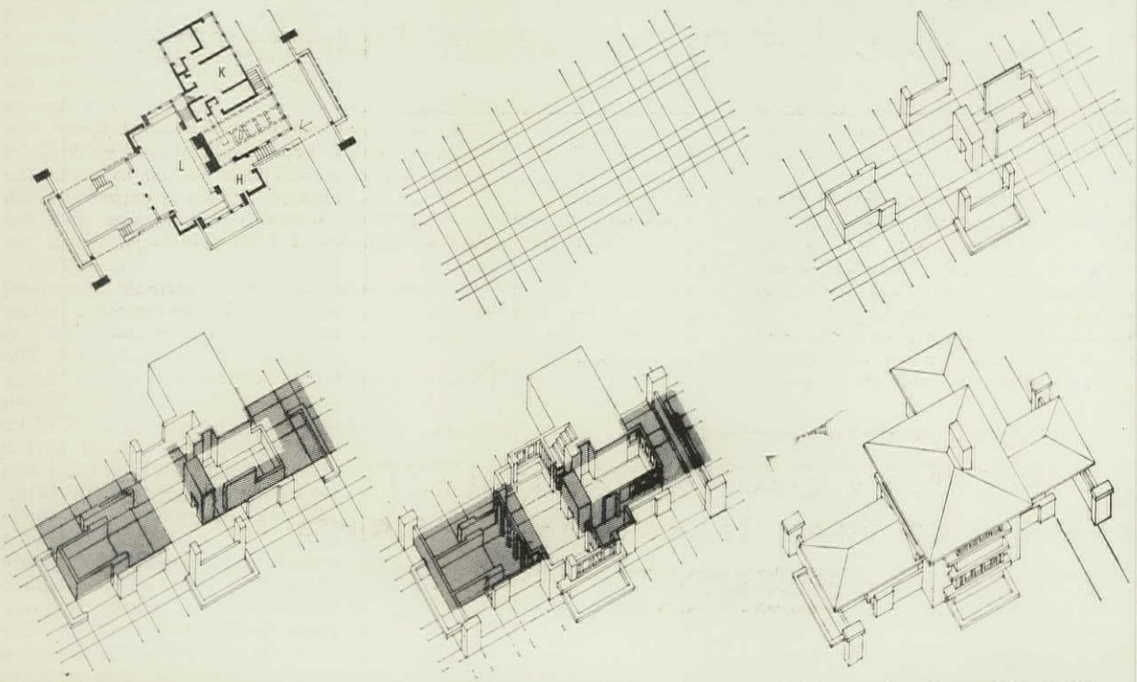


12, 'The E.E. Tomek house of 1907 is another variant of the same theme.'

main piers of the porch representing the outer figure, and the bay-window of the kitchen, the living-room flower boxes and the extended verandah of the porch representing the inner one. Other components submit as rigidly to the pattern; the living-room windows, with their large flat cills, and the chimney and dining-room sideboard expose the wider module of the tartan, the lesser module being taken up by the structure throughout. The grid also relates the house to the adjacent Martin house, with which it forms a larger group.

The E. E. Tomek house of 1907, 12, is another variant of the same theme. The grid, not so explicit or so readily comparable with Froebelian precedents, engages the sidewalks of the suburban corner site and integrates them into a circulation system continuous inside and outside the building. In the living areas, a distinction is made between 'served' and 'servant' spaces which recalls the Isidor Heller dining-room. Although it can be interpreted as a cross penetrating a rectangle, the Tomek house illustrates the longitudinality which Wright had begun to adopt in preference to the symmetrical cruciform plan. The organization is revealed frontally as a succession of layers standing one behind another. In previous examples, the inner modules of the plan have been revealed by successive projections at the extremities. Here, in addition, the screen-wall and non-structural piers in the foreground suggest that a layer has been stripped away to reveal the actual external wall in the middle. By disintegrating the perimeter wall in this way, Wright was able to expose further cross-references between the extremities of the plan, and to suggest that the main volume of the building stood within the grid rather than around it.[4]

The detached corner piers of the Robert Evans house of 1908, 13, have the same effect. To use an analogy with the kindergarten —it is almost as if they defined the extent of the ruled table-top within which the pattern stands. Wright's progress can be measured by comparing the Evans house with the Blossom house, 5, based upon the same cross-in-square plan sixteen years before. The windows of the Blossom house conform to an elevational discipline unrelated to the interior. Those of the Evans house express the cruciform component projecting between the blank corner units which establish the square. The tentative projections of the Blossom house have become, in the Evans house, the cantilevered roofs of verandah and *porte-cochère*. Beneath these the inner modules of the grid are represented by components of various heights, flower boxes, balustrades and bay windows arranged so that they overlap but do not obscure one another. With this assembly of parts, characteristic of the mature Prairie period, Wright translated the patterns of the kindergarten into a three-dimensional system of architecture.



13, 'The detached corner piers of the Robert Evans house of 1908 . . . suggest that the main volume of the building "stands" within the grid rather than around it.'

REFERENCES

[1] *The Kindergarten Guide, an illustrated handbook designed for the self-instruction of kindergarteners, mothers and nurses.* By Maria Kraus Boelte and John Kraus. New York, E. Steiger, 1877. All quotations are from this edition.

[2] 'As late as 1898 Herbert Spencer (whose works Wright was to read avidly) could still assert that the growth of crystals and organisms was "an essentially similar process".' See Peter Collins, 'Biological Analogy,' AR, December, 1959.

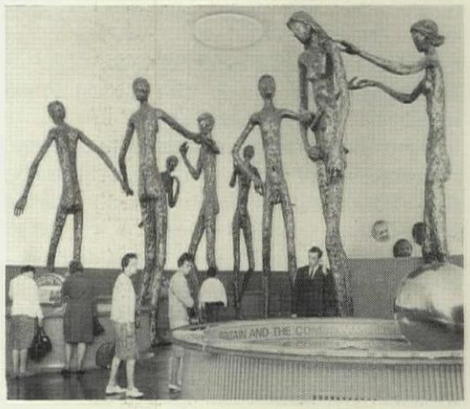
[3] At the end of the eighteenth century, Durand was providing his students at the Ecole Polytechnique with an array of abstract room-shapes which could be arranged on squared paper to make ideal symmetrical designs. There is no evidence to suggest that Froebel was familiar with this technique, though he was, for a short time, apprenticed to an architect. See *Changing Ideals in Modern Architecture* by Peter Collins.

[4] Grids and intersecting forms in the work of Le Corbusier are discussed in a joint article by Colin Rowe and Robert Slutsky, to which the present study is indebted. See *Perspecta* 8: 'Transparency: Literal and Phenomenal.'

A QUICK LOOK AT CANADIAN ART

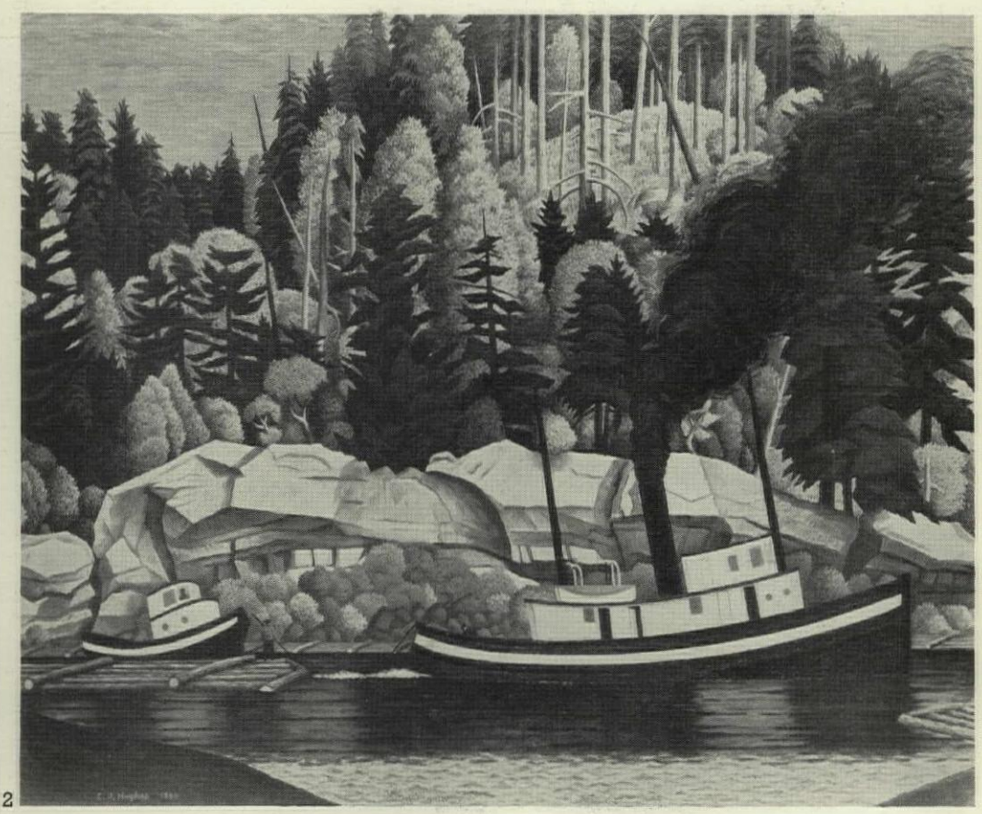
Robert Melville

When I was at Expo 67 just before it closed, I was told that an Ontario university had bought the ten tall sculptures which provided the final surprise in the British Pavilion, 1. They are aluminium castings enlarged by mechanical means from maquettes made by Mario Armengol, the industrial designer, and are well described in a Pavilion hand-out as 'unmistakably human—naked, raceless, expressionless men and women. They are placed in groups, hands extended in gestures of fellowship and goodwill.' They were popular and very effective. One came to them after passing through a series of tightly packed, somewhat claustrophobic enclosures, and the sudden spaciousness combined with their great height to give one a feeling of euphoria. The university authorities were presumably impressed by Armengol's reasonably contemporary idea of human decency, and if they read the hand-out, they may have perceived a permissible hint of permissiveness in the nudity of the figures and may even have noted approvingly the approval of interbreeding which is the logical conclusion to be drawn from that aspect of the figuration which the hand-out calls racelessness. But the sculptures are extremely superficial and are bound to retain the look of figures made for a temporary exhibition. The magnified imitation of the modelling texture of the original maquettes, the smoodginess of the faces and the vulgarization of Giacometti's elongations are particularly disagreeable. I doubt whether the university authorities sought the advice of the Art Gallery of Ontario or of any of those collectors in Toronto whose loans of sculpture by Rodin, Degas, Moore, Lipchitz, César and Hadju made so admirable a display in the Ontario Pavilion at Expo.

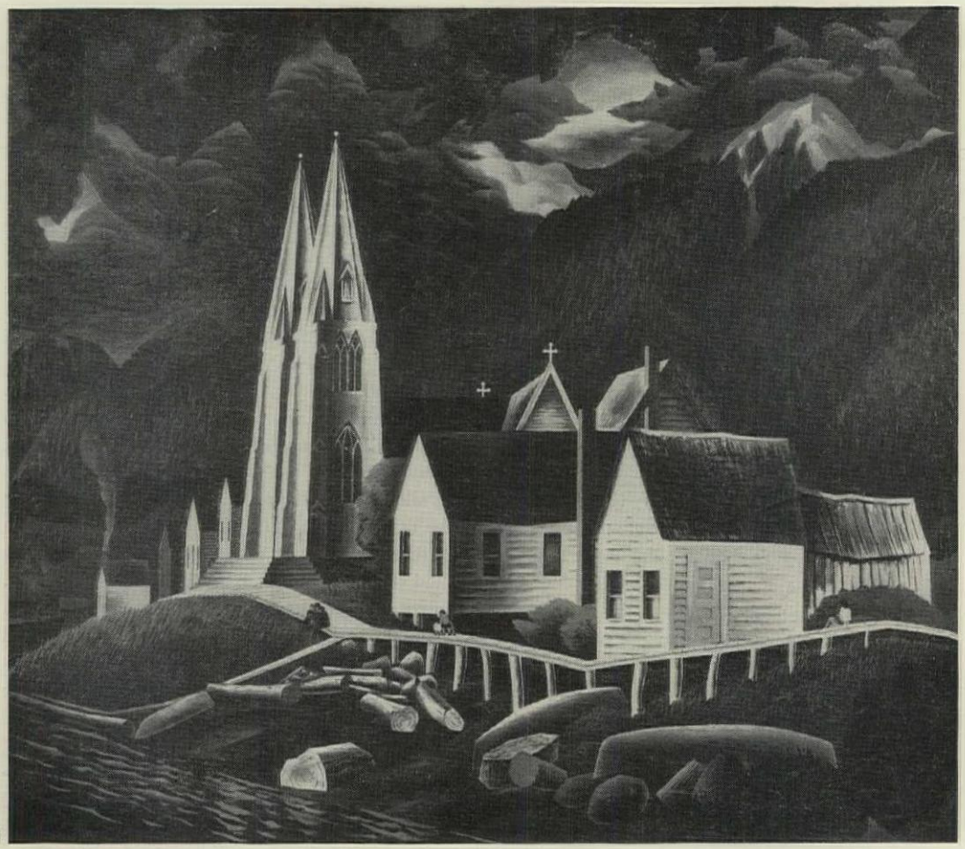


1, *Mario Armengol: ten sculptured figures.*

I suppose I must have seen a fair number of Canadian paintings from time to time, but I have to admit that few of them have registered. I vividly recall some paintings by Tom Thompson in a Tate show just before the war and I still find his landscapes impressive, but otherwise it's the abstracts of Riopelle, Borduas and Jack Bush which have seemed to me to be Canada's best contribution to painting. Now that I've made my first trip to Canada I've seen many more works that I like but no evidence of another artistic personality as brilliant and powerful as the four I have mentioned. It's true that I didn't have enough time to go exploring and that for the most part I had to be content to look at work in public collections and at exhibitions arranged by museums, but I saw representative examples of many of the avant-garde artists chosen by Bryan Robertson during his fabulous spending spree for the Province of Ontario, and the catalogue of his purchases seemed to confirm my impression that Canadian artists are making good, sound works in practically every idiom at present in vogue without contributing any profoundly personal discoveries. The stripe paintings of Guido Molinari and the targets of Claude Tousignant are outstanding in a Canadian context, but they would not provide an audience in New York or London with new experiences. Bryan Robertson maintains that the Canadian moderns are constructing a specifically Canadian language out of the elements of an international vocabulary, but I failed to see it and hope that Canadians are not really attempting it. Borduas and Riopelle were in a sense provincial Frenchmen who shed their provincialism by going to Paris, and they have lent support to *belle peinture* in France's time of need. The bolder, more naked paintings of Jack Bush are essentially a contribution to American painting, and as I see it Canadian art will be something to be reckoned with only if the artists think of themselves primarily as Americans. The boundaries between Canada and the US are too artificial to make cultural sense in the



2, *E. J. Hughes: 'Tug boats, Ladysmith Harbour.'*



3, *E. J. Hughes: 'Indian Church, North Vancouver.'*

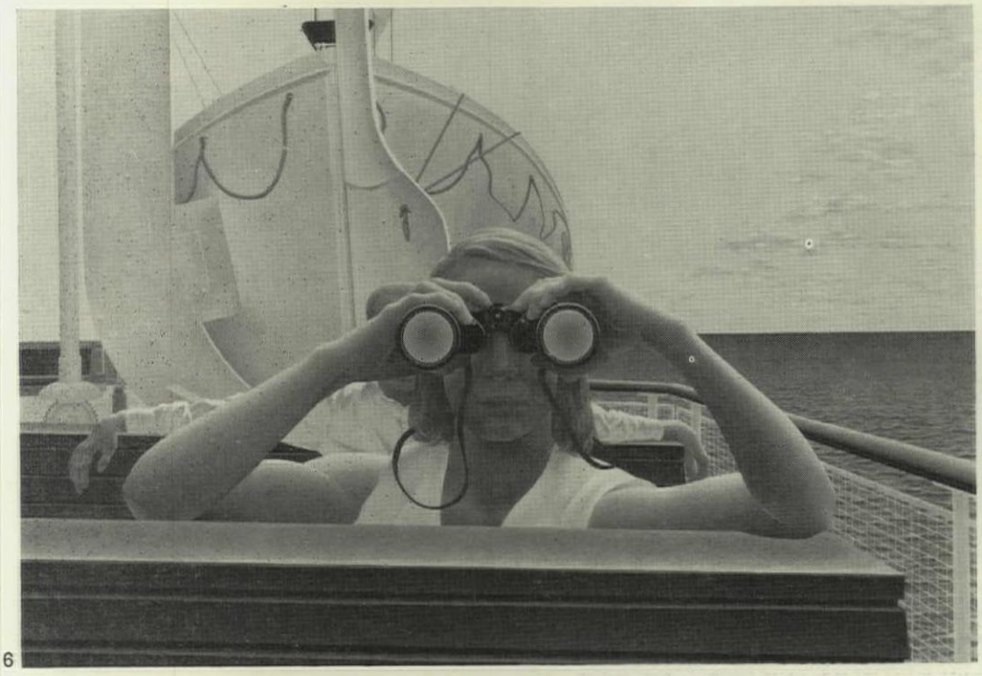
modern world. Canadianism can survive charmingly enough in the art of a regional painter like E. J. Hughes, but his work has no relevance to the problems of modern art. I saw a Hughes retrospective at Vancouver Art Gallery, and his paintings of harbours and small settlements in British Columbia are filled with the spirit of place, 2 and 3. His sharp eye for distant detail and his way of measuring off space into orderly sequences give his paintings a primitive look and a curious poignancy, as if they were scenes remembered from a happy childhood. Doris Shadbolt sums him up perfectly in the catalogue: 'Essentially a loner and a non-intellectual, he belongs to no school and will never found one. He will not receive the acclaim of the true contemporary who adds collective relevance to whatever other qualities he may have, but on the other hand his private revelation is of a kind to resist the wearing of time.'

In Toronto, I caught up with the exhibition called '300 Years of Canadian Art' first shown in the National Gallery in Ottawa to celebrate the centenary of Confederation. (Incidentally, the catalogues of exhibitions issued by all the public galleries I visited are of a very high standard, with good colour plates and first-rate documentation.) The '300 years' show started with some gilded and painted carvings of Virgins and Saints of the French Colonial period, not very wonderful but highly professional. The earliest examples of this church art were made by French craftsmen brought in from France late in the seventeenth century, and local craftsmen trained in their workshops carried on the tradition. It's only in some of the late examples, when the tradition was wearing thin, that this sculpture becomes rather unsophisticated and begins to look like folk art. Portraiture and landscape painting became predominant in the English Colonial period. Like many other examples of early nineteenth-century Canadian painting, the group portrait of the Woolsey Family, 4, done in the manner of the English conversation piece, is a bit wooden but can't really be called folk art. There is an interesting label on the back, signed by J. W. Woolsey, who is standing behind the woman holding the child. 'The family group represented in this Picture, was painted in 1809, by Mr Berczy, an Amateur, assisted by his Son William. The eight portraits cost Ten pounds each, the dog Brador was added without cost.' Mr. Woolsey must have been a nice man. Many another patron would have spoilt Mr. Berczy's handsome gesture by arguing that the small child should have been half price anyway. Canada doesn't seem to have produced a primitive comparable to the New Englander Edward Hicks, but the exhibition contained a few delightful oddities, such as the landscape with a Chinese-looking background and a Russian-looking foreground entitled 'The Ice-cone, Montmorency Falls,' 5, the work of Robert C. Todd, an Englishman who was trained as a house and sign painter and settled in Quebec round about 1830.

4, *Berczy: group portrait of the Woolsey family.*

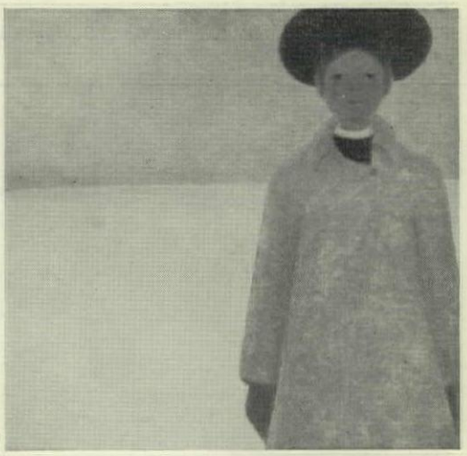
5, *Robert C. Todd: 'The Ice-cone, Montmorency Falls.'*

Alex Colville is, I think, one of Canada's most remarkable image-makers. He is not in the modern movement and his work can fairly be described as Canada's contribution to the American school of 'magic realism.' The hard, cold, separatistic falsification of appearances which puts his figures into a state of alienation was superbly represented in the exhibition by a painting entitled 'To Prince Edward Island,' 6. The light blue lenses of the binoculars give the sullen-faced girl a sightless stare and create an astonishingly vivid sense of inner turmoil, as if she might be totally at odds with the half-seen man behind her. The flesh, wierdly composed of dapples of yellowish green and dull red arranged in bands, conveys a sense of sunburn mottled by cold and adds to the sense of unease, as if it were imprinted by a psychic disorder.



6, *Alex Colville: 'To Prince Edward Island.'*

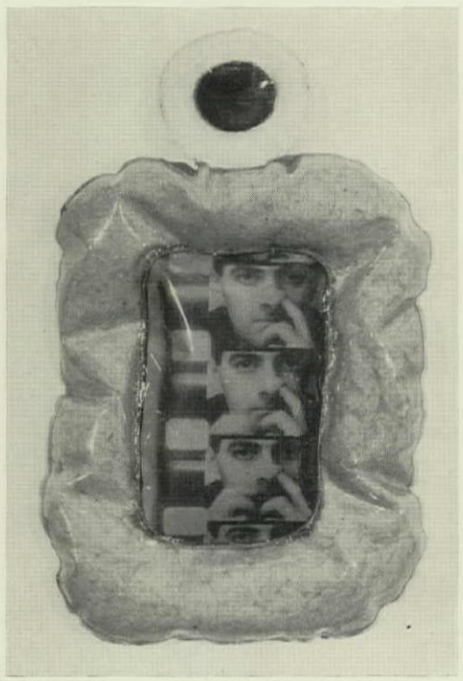
The painter Jean Paul Lemieux, several years older than Colville, is highly thought of in Canada and might have been better represented in the exhibition if it had not coincided with a Retrospective of his work organized by the Montreal Museum of Fine Art. I saw the show when it went to Quebec. They say that Lemieux has captured 'the inner spirit of the the people of Quebec,' and if so most of them must be pretty melancholy or given to staring blankly. A good many of his studies of Quebecers look as folksy as the artist himself sounds when explaining his pictures. 'She has a lovely smile but, look, she has no teeth. The man looks somewhat severe; in fact, he is a bit of a bore. You can see it in his mouth. He does not forget easily. She is a little frustrated by life and also a little bitter.' Lemieux is evidently a 'character,' like our own Lowry, but what I find interesting about him is his preoccupation with the art of Edvard Munch. He even sets some of his pictures back in time in order to include men in top hats and women in long skirts, and gives them a phantasmal appearance as if they had come at his bidding from Norwegian churchyards. He has absorbed Munch's dramatic sense of placing and has nowhere used it more delightfully than in 'Julie and the Universe,' 7. I find it fascinating that concern with so fierce a genius as Munch can yield so mild an image.



7, *Jean Paul Lemieux: 'Julie and the Universe.'*

In Ottawa, the National Gallery was gathering together a group of works by young Canadian artists for exhibition in Paris and Rome, and there was an attractive impudence about the work of two artists experimenting with

swollen plastic bags. Iain Baxter of Vancouver, who calls plastic 'the pottery of today,' will be exhibiting a 'Bagged Landscape,' 8, a transparent vinyl bag containing a toy boat floating in real water against painted mountains; another air-filled bag attached to the larger one represents a white cloud. The sheer gaiety of the thing is seductive, and the fact that the ingredients really do suggest a Vancouver coastal scene introduces a pleasantly confusing element of regionalism into a work in which the medium is undoubtedly the message. There is broad humour in Joyce Weiland's 'Larry's Recent Behaviour from the Film of the Same Name,' 9. For the seemingly worsening behaviour of Larry she uses black-and-white blow-ups of three frames from one of her own films. They are sealed off inside a plastic bag and the outer margins of the bag, bulging with a coloured filling, form a blown-up frame. These things seem less likely than the old-fashioned paintings of E. J. Hughes to 'resist the wearing of time,' but, as Baxter has remarked in an additional claim for his medium, 'torn plastic is the new drapery.'



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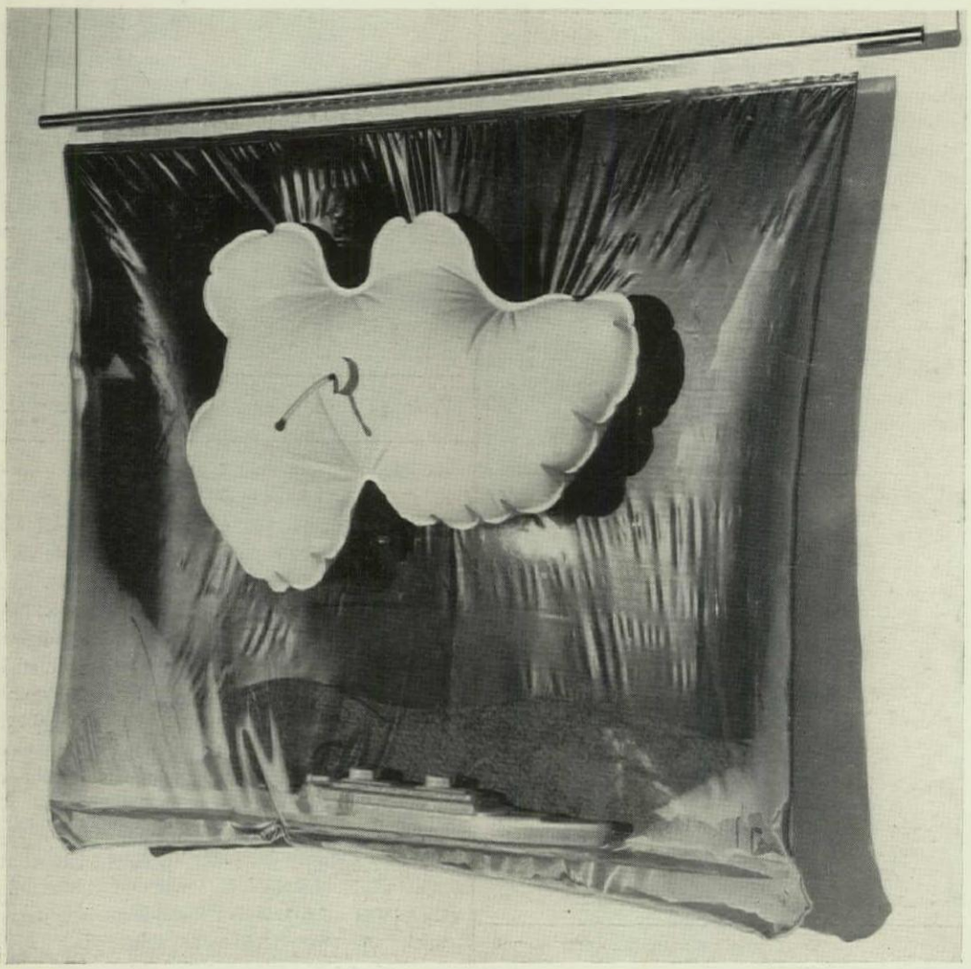
8, *Iain Baxter: 'Bagged Landscape.'* 9, *Joyce Weiland: 'Larry's Recent Behaviour from the Film of the Same Name.'*



8

UNDER THE MOTORWAY

Richard Reid

Elevated highways, while making life easier for the motorist, pose many problems of environment. These problems, such as noise, scale, overshadowing, neutralizing of ground and so on, need to be anticipated, for they will occur more and more frequently. One of them, discussed in the following pages, is what to do with the space underneath the road. For an example we have taken a section of the Western Avenue extension, now being built, which passes through a densely populated area also extremely short of open space. The need for a more imaginative approach than mere automatic allocation of the space under the road for car parking (as the GLC has proposed) has been publicized by a local ad hoc society, The North Kensington Playspace Group. They stress the need to use this vacant space. Below, Richard Reid describes the situation and illustrates his suggestions for tying the space into its surroundings, while on pages 153-154 *are two schemes showing a different approach by students of Kingston School of Architecture.*

In order to free one section of London from the millstone of through traffic the remedy tends to right its wrongs at the expense of others. Quite obviously through traffic has got to get through somewhere, but how? An elevated road is expensive, often downright ugly, but in most cases it is very convenient. But the real problem is not so much in the creation of an elevated road but in the establishment of acceptable environmental standards along the areas immediately affected by it. It is the total lack of thought as to the environment affected by such road proposals that makes elevated structures, like the Hammersmith flyover, so ugly and so depressive. What a farce it is then to have gone to the extent, as with the Western Avenue Extension, of having most of the foundations well under way for 2½ miles of elevated roadway and yet never to have set, even vaguely, standards for the environment affected by it. No wonder areas like North Kensington lose heart like a pregnant mother in a council condemned house. It is imperative that the environmental standards should be set first and the vehicle and pedestrian networks used as tools to achieve them.

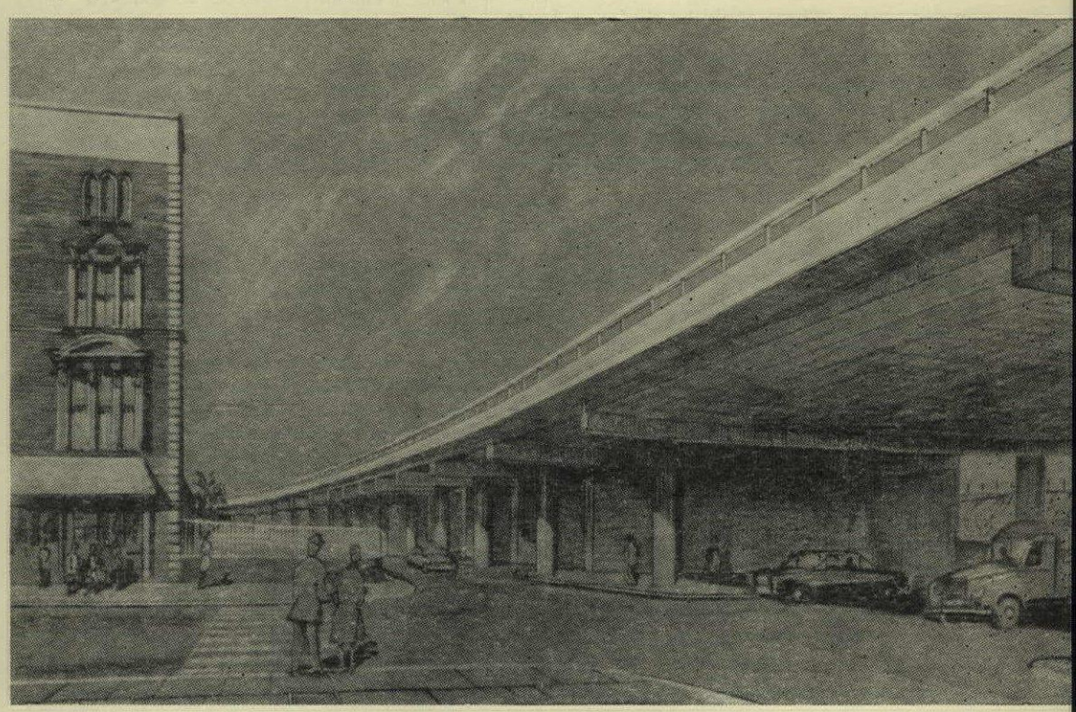
The nearly 12 miles of arterial road from the White City Stadium in Wood Lane to Denham, called Western Avenue, was conceived 50 years ago as a fast exit from London and built in stages between 1920 and 1943. In recent years it has been reconstructed to provide dual carriageways. But there has never been a satisfactory route north of Shepherds Bush from north-west London to Western Avenue.

The 2½-mile Western Avenue extension eastward into the north-western part of the central area is planned to remove through traffic from Shepherds Bush. The snags about it, however, are that the environment along the whole length affected by it has not been considered, the Central London meter zone abuts it and, worst of all, there is provision for car parking under one section of it (Section 4) that will undoubtedly be a haven for commuter cars. This particular section is an important one in terms of North Kensington as it crosses the main core of the area, Portobello Road which, if environmentally managed, could become the major path in a pedestrian network linking up to Queensway in the south-east.

Section 4, nearly half-a-mile in length, extends from the east side of St. Mark's Road to the west side of Bevington Road. It runs along the line of the railway embankment with a service road at ground level. But unless this service road is turned into some sort of cul-de-sac it might well become a short cut between Portobello Road and Ladbroke Grove and, if car parking remains, this whole stretch will become very much the dirty backyard many councillors obviously believe it is. There is a ray of hope, however, since the GLC seem prepared, at last, to consider alternative ideas for this particular section, as a result of the gentle but determined persuasion of a local activist group.

It started, at first, with the suggestion that a couple of bays along Section 4 should be

GLC perspectives such as this show a grim environment at ground level.

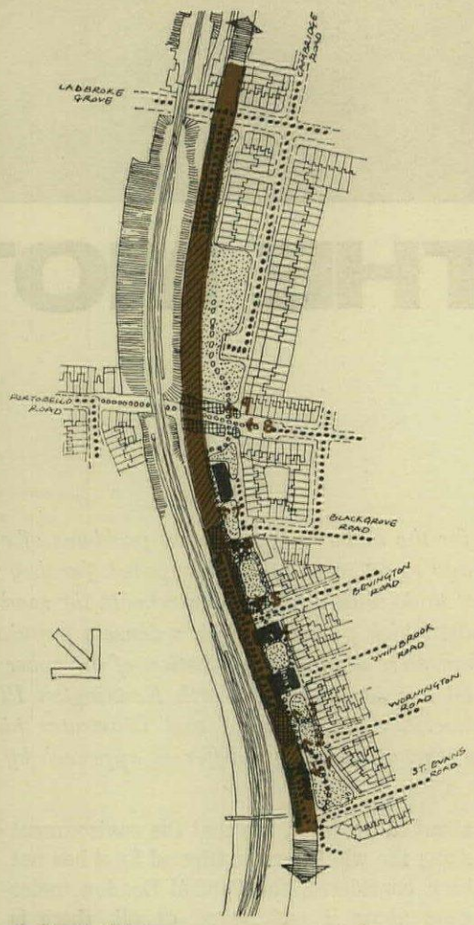


given over for use as an adventure playground, but with a ready flow of ideas this could well be the beginnings of a whole new approach to the design of the underneath of motorways. Obviously any activity is bound to be limited to specific areas where it is needed and the aim should be to achieve a total concept rather than a scattering of ideas. So far, the ideas which have been put forward seem to do a blitzkrieg on a short length across Portobello Road, inserting a very wide range of activities under the motorway. However, when even Portobello Road market is only really swinging on Saturdays, it can be argued that the Egyptian Bazaar approach is questionable and that only activities really needed should be there—an all-weeker concentrating on local colour for locals.

A sort of linear refresher space before the all night shifts begin; an all shades of grey space that will put a bit of pep and identity back into the life of a no-man's land. But above all it must be refreshing. My suggestion would be to bring it out into the open and turn the present service road into a pedestrian area with a series of linear landscaping forms linking the whole length. A bit of hard and soft areas for kids—a moulded pavement that becomes a paddling pool in the summer, an excavator that turns a flat land into a small hill or hollow and mature trees pruned back to miss the motorway. A few shops possibly, maybe a cafe or two—all facing in towards the neighbourhood, not shut out from it. Then shove the service road under the motorway—there are holes in the cross walls to take it—but make sure it's a cul-de-sac and not a through road. There are tremendous opportunities here for ideas. Sketches 1 - 9 show some of them.

There could be an old people's club, an adventure playground, a day nursery, painting and musicians' practice rooms and a community centre. There could be clinics, a dance hall for hire and possibly a centre grouping domestic services for the working housewives. These are all suggestions made in a survey carried out by a local group (the North Kensington Playspace Group), headed by Adam Ritchie, which is trying to raise support for such a scheme. Some of the ideas are plain wishful thinking in economic terms but all must be considered. But if you make it a charity organization it'll fizzle out. Let them pay their way. There's no abuse in this method and there is a great deal more pride to be had for it and a chance for real involvement.

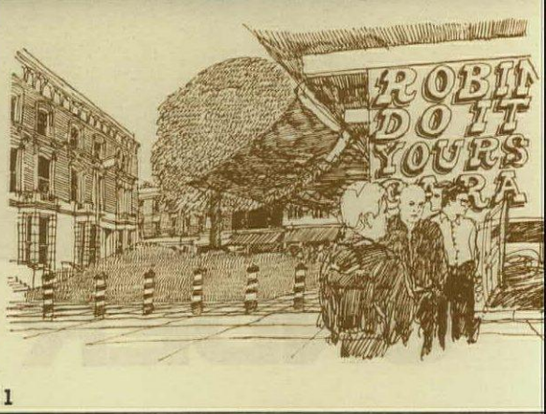
It is important that something should be done, and now. All around us there are other frayed edges of districts left to fester like open wounds. A little slice here, a village green there, all going for the sake of someone else's traffic problem, all being clinically carved up like a front-line hospital emergency. But whatever the remedy in terms of environmental management the resultant design must have a sense of place.



plan of Section 4 showing Richard Reid's suggestions (numbered arrows indicate viewpoint of illustrations).

Suggestions by Richard Reid

I suggest that the present road alongside the Western Avenue extension, Acklam Road, should be closed to all through traffic. Its function should be purely a social and local one to act as a unifying medium to the area as a whole. The space should be treated as a linear path-cum-edge to the district north of the underground. It could well act as a core area with possibly a 'do-it-yourself' garage, 1, alongside hard and soft landscaped areas, which could be treated almost as sculptural forms emphasising the lineality of the space, 2. There could be cups formed in these areas which, on hot summer days, could be flooded for children's paddling pools. Perhaps a number of shops could be attracted to the area, 3. These would have to be very much of a localized nature as this area should avoid being just another extension of the Saturday-only treatment in the Portobello Road. Halls for plays, sculpture or painting could be erected quite cheaply. These might be large covered areas through which you could walk, 4, or no more than enclosures around courtyards; the most important thing being that they would help as breaks to counteract the long anti-pedestrian perspective of the elevated motorway and also to form barriers to the proposals for the landscaped areas along Acklam Road. Perhaps some shops could be in a tent market, possibly introducing one or two elements from the north end of the Portobello Road. A children's library, 5, and play



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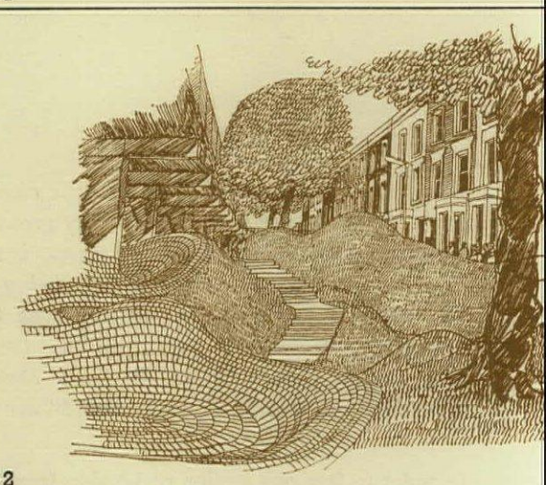

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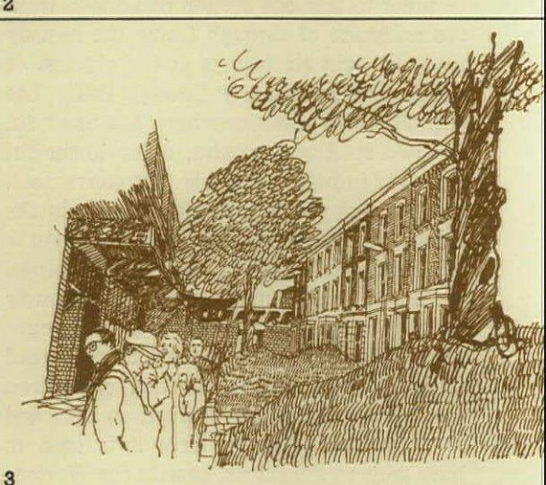

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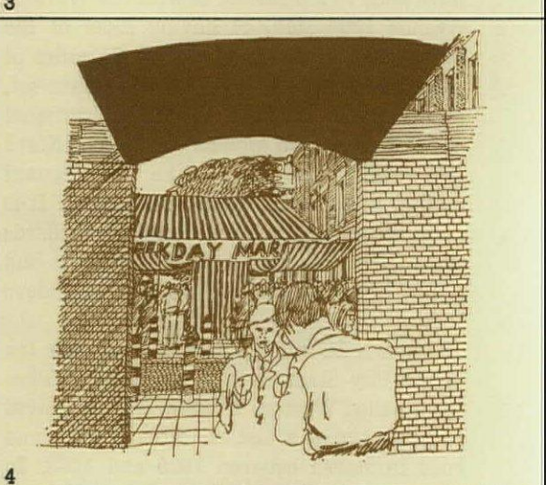

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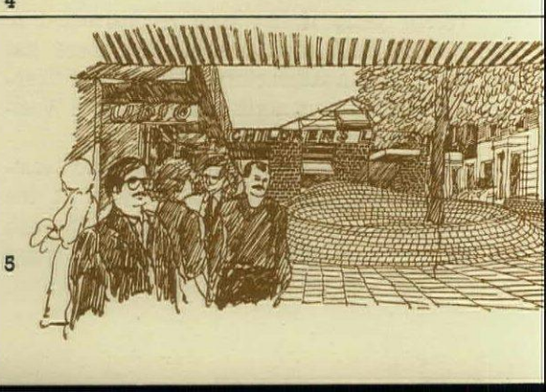

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THE TOLERANT CHAIR

N11 CONWAY

N13 HIGH CONWAY

This simple chair has been knowingly
designed and shaped by craftsmen who understand
the punishment chairs have to tolerate.
What's more, we've built in a surplus of tolerance
for a rainy day.
So this little chair knows a thing
or two about standing on its own four feet.

THE INTOLERANT CHAIR

N12 HIGH COMPTON

N10 COMPTON

N18 COPNOR

N17 CORSHAM

It takes craftsmen to build
a simple, elegant chair and conceal
inside it a powerhouse of intolerance.
Try sitting down in one and
then get up. The chair will spring smartly
back to its original shape.
It can give as good as it takes.

CORNWELL-NORTON LTD.,
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area by some of the shops, 6, might be another idea worth investigating. Further along a roof might cover a boxing ring or small gymnasium, 7. Where Acklam Road joins the Portobello Road an arcade could be built as a natural fulcrum for the two roads to hinge on, 8. West of this the space could be designed as a very long park to camouflage the strong line of the elevated road at this section, 9. The trees in the park would turn what in the east is a hard edge, to a soft one in the west, and also give some much needed open space to this district.

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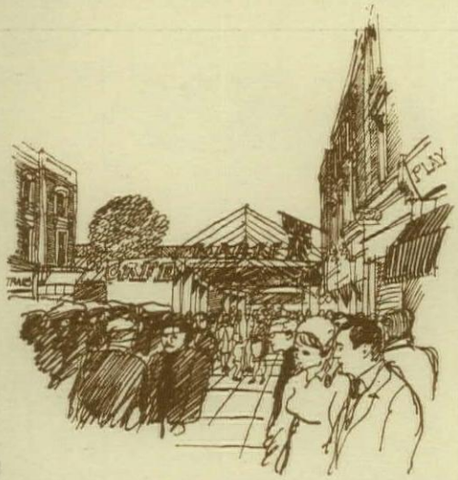

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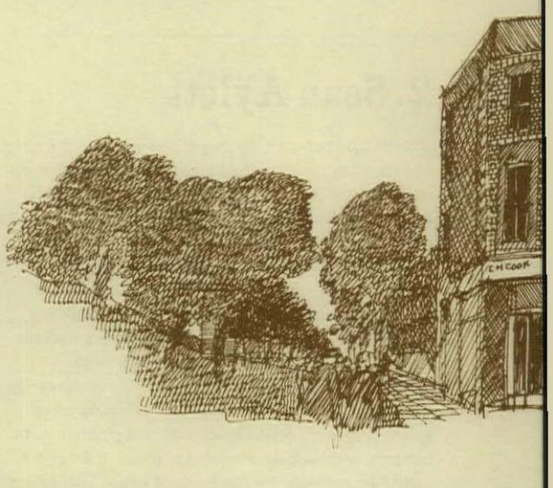
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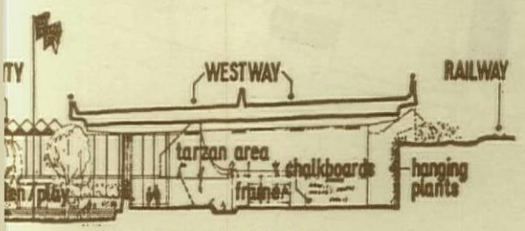
Suggestions by students of the Kingston School of Architecture

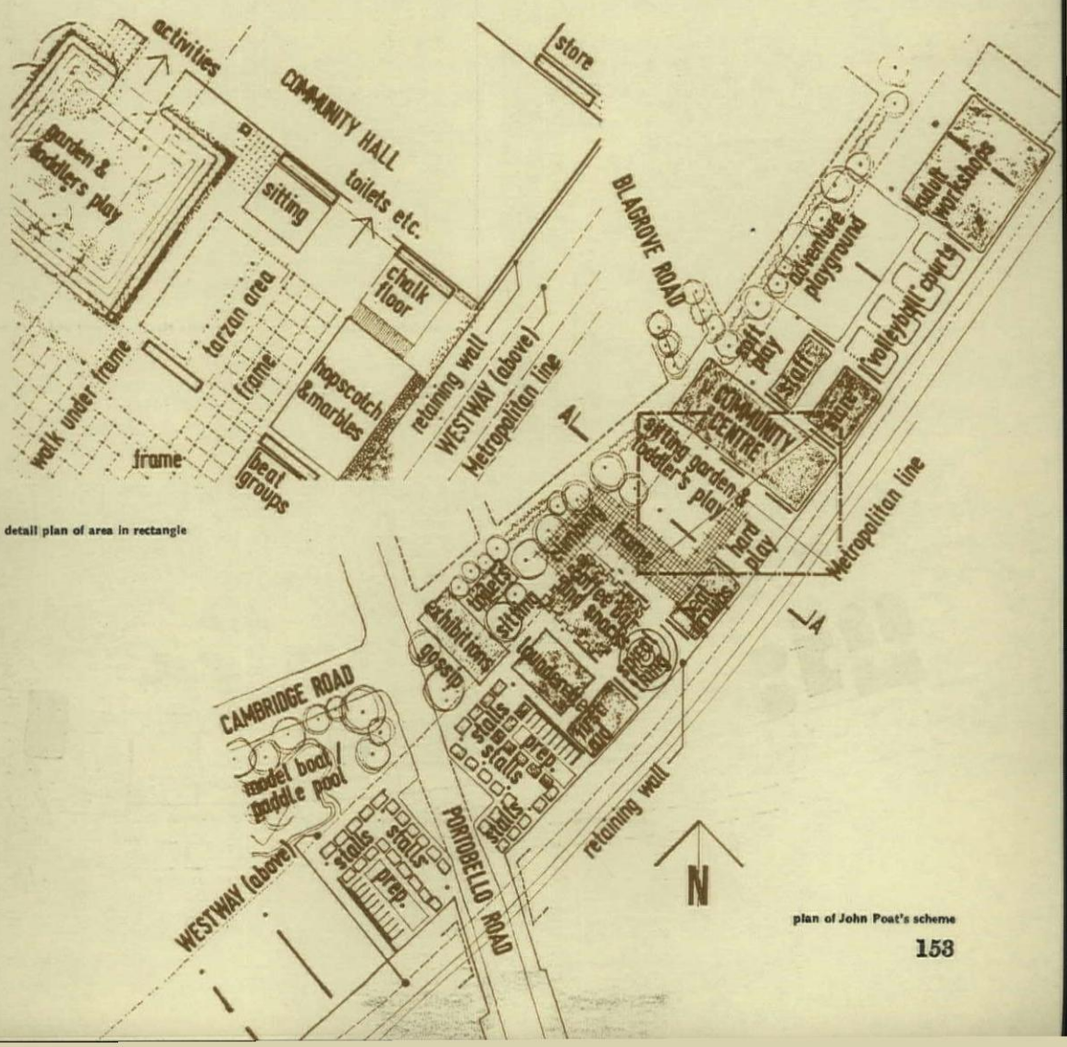
At the suggestion of the Playspace Group, this problem of the use of left-over space under the motorway was recently set as a two-day sketch design for students of the Kingston School of Architecture. It produced some imaginative ideas on what might be done. Two of the more interesting schemes are illustrated below.

1 John Poat

The first, by John Poat, was concerned with intensive use of a stretch of some 230 yards from Portobello Road to Bevington Road. In order to balance the monotony of crosswalls and beams, he proposed a scheme which avoided slavishly echoing the rhythm of the highway's supporting structure. Considering variety of route and view to be essential, he used the 'tunnel' through the crosswalls (dictated by the motorway structure), as well as the space adjacent to the highway, to create a fluidity of movement. To maintain visual interest where the site was cut by Portobello Road, he branched the existing street market off under the elevated highway on either side of the road with artificial lighting concentrated on the stalls to



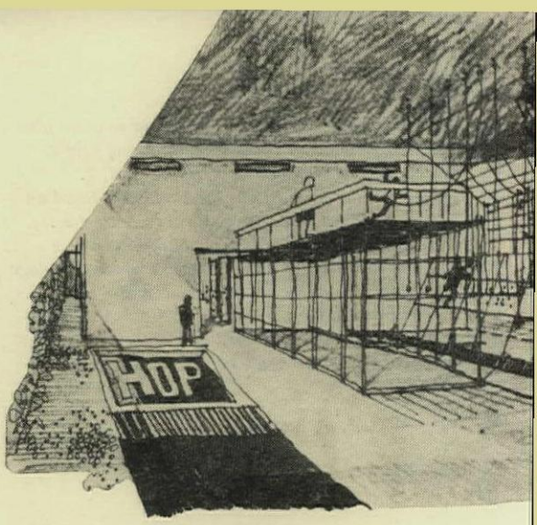
section A—A through John Poat's scheme



detail plan of area in rectangle

plan of John Poat's scheme

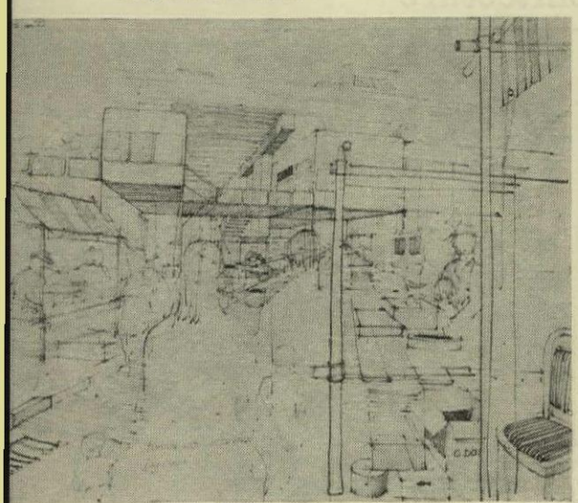
brighten the gloom created by both elevated highway and rail bridge and attract people off the existing axis of Portobello Road.
A feature of the scheme was an adventure playground, on the lines of the existing and highly popular one in Telford Road, and also a 'Tarzan area' with ropes and a climbing frame. The latter would be a structure of varying heights partly under the highway and partly out in the open with the retaining wall of the railway embankment screened by hanging plants (see section). Play areas under the highway would be floodlit for day and night use with surfaces designed to allow specific games to be played. There would be a community centre and volley ball courts and a toddlers' garden—a sunken area screened by planting where mothers could sit and chat while their children played in safety. Also shown are snackbars, a paddling pool and adult workshops.
A landscaped walk would stretch from St. Ervan's Road to Portobello Road and small places with seats and tables where people could sit and chat would be incorporated wherever a sunny position occurred. There would also be space for beat groups and exhibitions.

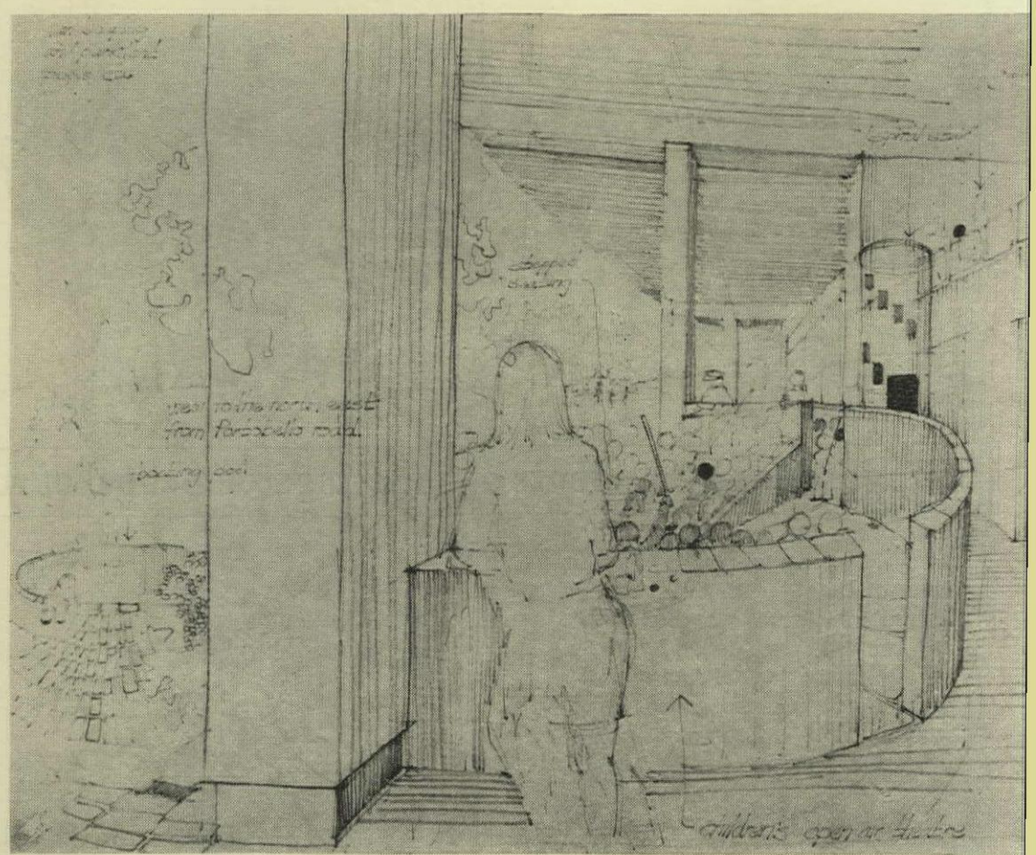


John Poat's suggestion for a 'Tarzan area'

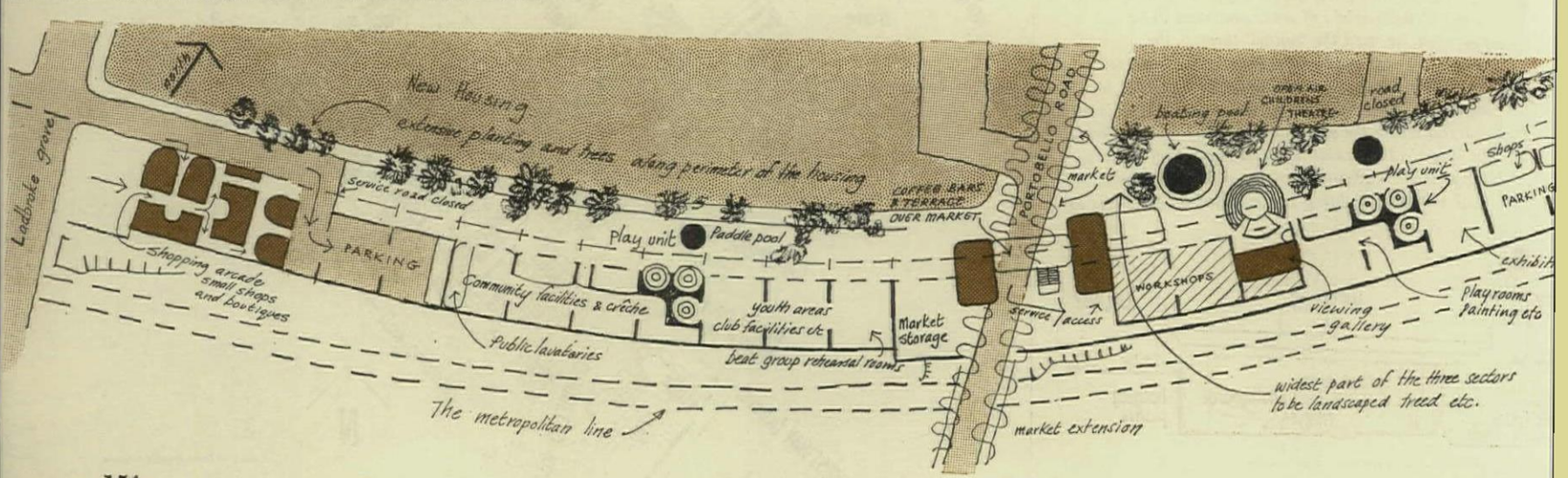
2. Sean Aylett

The second scheme, by Sean Aylett, aimed firstly at extending and unifying such space as already existed with that covered by the motorway, and secondly providing various uses to which the space could be allocated, notably a children's open-air theatre. His scheme, which in some places used the headroom under the motorway as two level space, also showed an extension of the existing Portobello Market with storage facilities and an arcade of small shops and boutiques near Ladbroke Grove. There would also be community facilities, a creche, internal and external play space, youth club facilities and a coffee bar with terraces overlooking Portobello Road. The effect would be softened by landscaped areas including a boating pool and extensive planting adjacent to the perimeter houses.



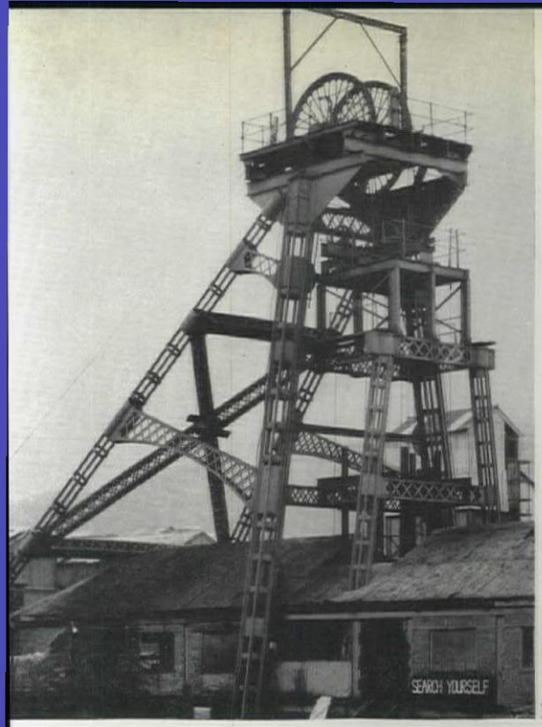


Sean Aylett's suggestions: left, the Portobello Market extended under the motorway: above, the children's theatre: below, plan



PITHEAD ARCHAEOLOGY

In March, 1967, the AR reported on the enterprising activities of the Düsseldorf artist-photographer, Bernhard Becher, and his wife who, on their own initiative, have for some years been photographing early industrial structures of various kinds and making a valuable contribution to present-day studies in industrial archaeology. With that article some examples were reproduced of their fascinating collection of German water-towers. It was mentioned then that, helped by the British Council, the Bechers had been exploring coalfields in Wales, Scotland and England and recording photographically early examples of pithead machinery and other structures. Herewith (and on the frontispiece to this issue) are reproduced some items from their impressive collection. They illustrate the beauties, as well as the structural expressiveness, of colliery winding gear, the evolution of which



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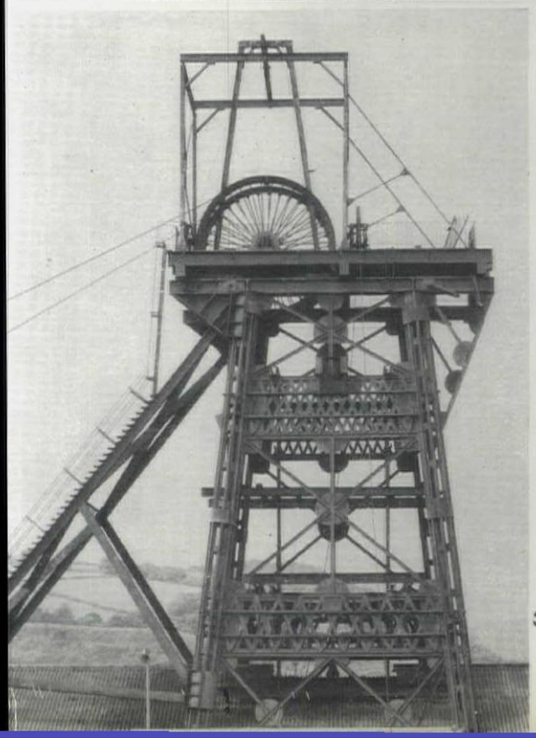
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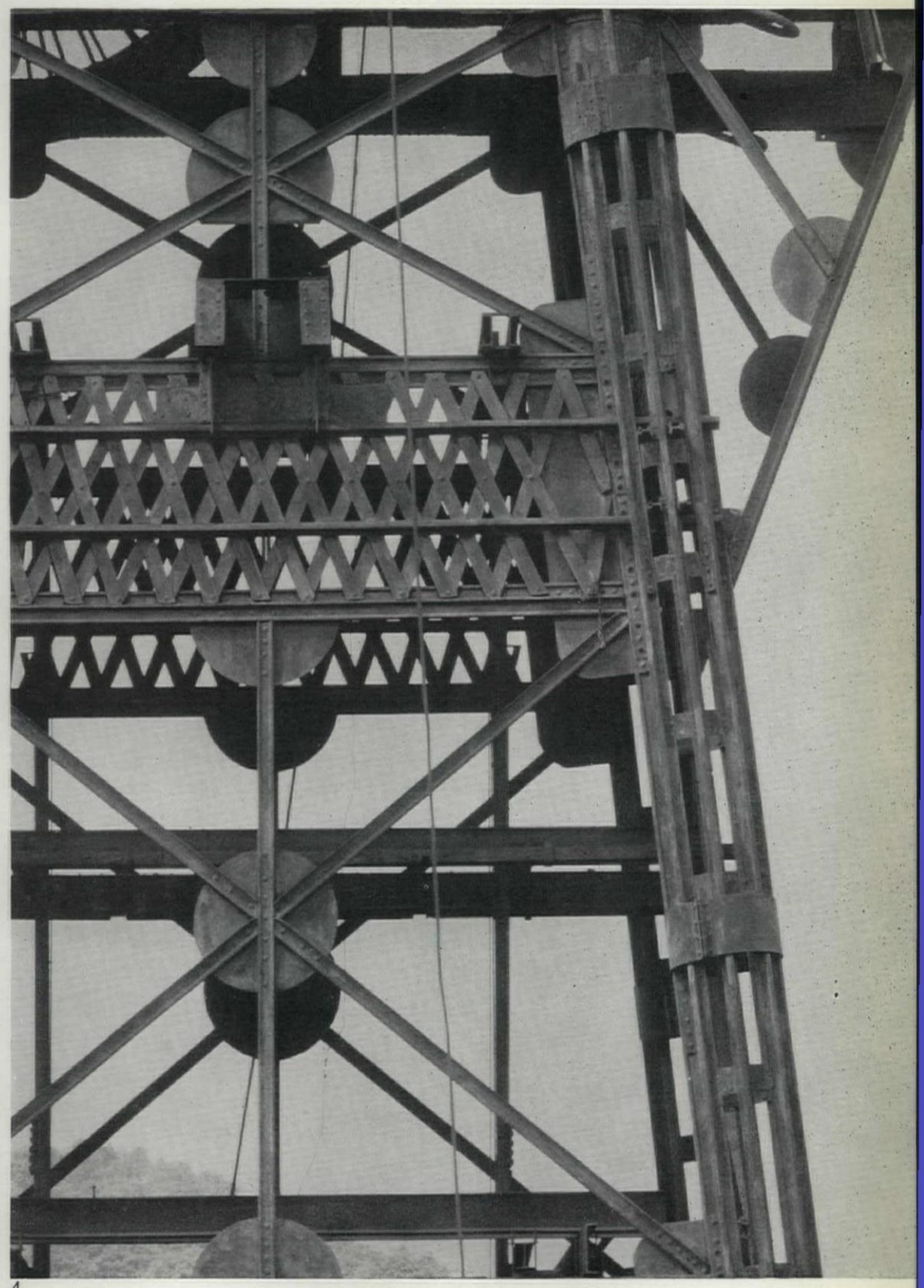
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is briefly summarized below on the basis of notes supplied by the Bechers.

Up to about the middle of the nineteenth century the frames or towers that held the winding gear were of timber. They varied in complexity from a simple wooden scaffold—resembling a draw-well—to a highly complex tower structure. Since timber was cheap and easily processed it continued to be used, in

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pits where the coal was not far below the surface, until well into the present century. For deeper pits stronger towers were increasingly needed, and from about 1840 the familiar type of lattice steel structure was developed. This proved almost ideal, with its combination of strength and elasticity, and the fact that a number of the towers for winding gear constructed at this time are still operating is proof of their adaptability to the steadily increasing loads.

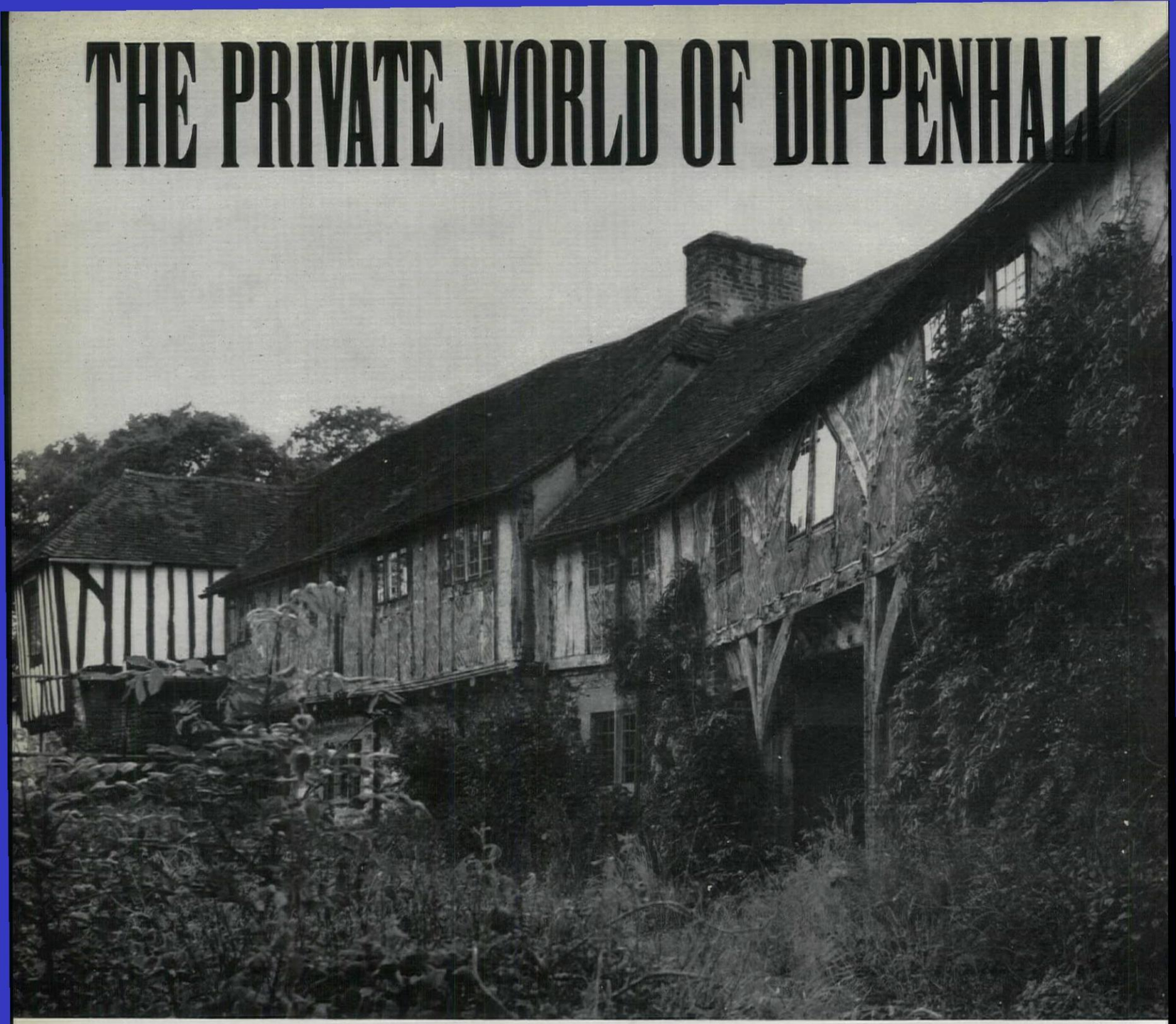
The example shown on the frontispiece, and in 1 herewith, is a case in point: the winding gear at the Deep Duffryn colliery, Mountain Ash, South Wales, built in 1842 from rolled steel sections and lattice beams and still in use. The designs for these early towers were usually locally produced by the colliery's own engineers. Full size drawings were made in chalk on black paper laid out on the floor, which made it possible to take accurate measurements of the individual parts and check their angles relative to each other. From this method there developed a considerable degree of standardization, facilitating the replacement of parts as well as the installation of whole towers.

Another Welsh example, still in operation though not quite so early, is shown in 2: at the Merthyr Vale colliery at Merthyr Tydfil, built in 1864. 3 is a closer view of the winding gear at the downcast shaft at the same colliery, seen in the distance in 2 (the nearer structure being the upcast shaft), and 4 is an even closer view showing the construction made up of rolled sections and lattice beams. These particular towers were at one time reinforced by ropes, acting like the guy-ropes of a tent; these were replaced by lattice steel in 1920 in the case of one tower and as recently as 1963 in the other.

By way of comparison, 5, 6 and 7 are from one of the German collieries in the Bechers' collection: the Neu Iserlohn, near Bochum-Werne. This example is somewhat later—the exact date could not be discovered, but it seems to have been after 1880. It uses the same—by now well established—type of structure which is known locally as 'English winding gear, Thompson construction.' This tower is still in use for the ventilation machinery, though no longer for the winding gear.

The differences in the form and size of these towers depended on a number of factors: depth of shaft (and the acceleration of the winding process in the case of very deep sinkings); the size and number of the cages to be raised and whether they are unloaded at different levels; the relationship to the other colliery buildings and the area of ground available for the pithead gear; the safety regulations in force at the particular colliery. Although the steel towers illustrated here served their purpose admirably—and still do—towers of reinforced concrete began to replace them in the 1920's, especially in collieries of large capacity where the introduction of electric winding engines made it practicable for the engines and winding gear to be accommodated in one concrete building.

THE PRIVATE WORLD OF DIPPENHALL



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The forgotten shade of that architectural supertramp Harold Falkner (1875–1963) was first summoned back to the pages of the AR in Nikolaus Pevsner's obituary of him (April, 1964). He is best remembered for the neo-Georgian pastiches he designed from about 1910 for the jeweller-cum-developer Borelli in the centre of Farnham, the Surrey market town become stockbroker suburb in which he was born and to which he returned when he set up a 'country house' practice in 1902–3.

In his day, however, Falkner won renown principally as an evocative architectural draughtsman, in the perspectives of his own houses that he exhibited at the Royal Academy and in the topographical articles on ancient towns that he illustrated for the REVIEW. What is not generally known is that, after the Great War, while retaining his own home at 24 West Street, Farnham, he set up as a property developer at Dippenhall, a mile north-west of the town, where his family had owned land for generations; and there, from 1921 to his death, for more than forty years as money allowed, he built with his own hands no less than nine houses for sale: The Barn, Deans, Overdeans Court, Meads, Halfway House, Burles, Burles Lodge, Grovers Farm and Black Barn (to give them their chronological order). According to Mr. Maxwell Aylwin, his former partner, this amazing dream world was 'a retreat from the annoyance of clients and authorities of all sorts.'

Deans Farm, a Georgian house with a shell-hooded doorcase, was bought in 1921, and Falkner added to it considerably. In its garden he remodelled a cottage into Deans, a rather dull essay in the Baillie-Scottish half-timber manner with a nice plain porch in 'artisan' brickwork. Behind it, reached from the road through a picturesque brick gatehouse with a timber arch (known as The Barn Cottage), he built a much larger house, The Barn, with a continuous whale-backed roofline spreading almost down to the ground on the entrance front. Inside, an enormous open-plan living room has a central chimney-column supporting its beamed roof. The half-timbered garden side (grey-and-red, not black-and-white) has formal pools and paving and two flanking domed gazebos; Falkner had been a pupil in 1896–9 (before his four-year partnership with Niven and Wigglesworth) of Sir Reginald Blomfield, then leading the classical rethinking with his book *The Formal Garden*, 1893.

It was Falkner's third house, Overdeans Court, finished in 1929–30, that really set the tone of inspired lunacy that characterizes the rest of Dippenhall. Merging into a copse across the top of a ridge, it consists of two barns from nearby Runwick placed end to end, meandering like a village street, 1—but the 'good taste' of the present American owner is gradually repainting it in teahouse stripes. The living rooms are placed *en suite* so that when the doors are open there is a single space culminating in a tall oriel window, 2, here shown when it still had the romantic decay of an Edgar Allan Poe film-set.

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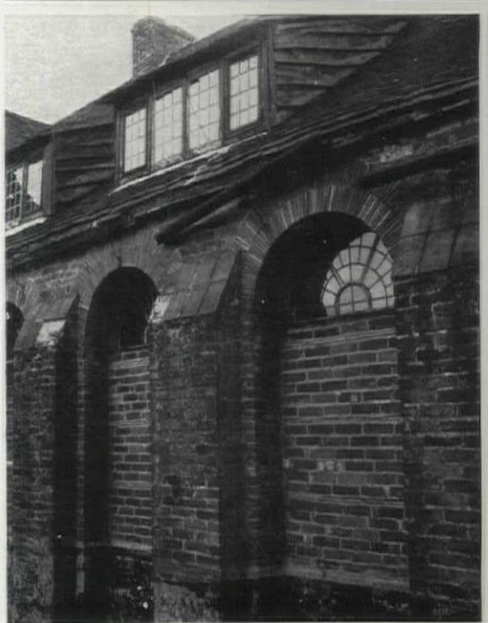

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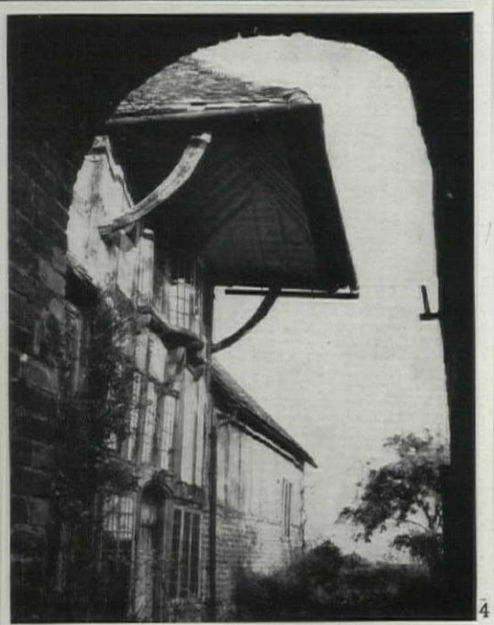

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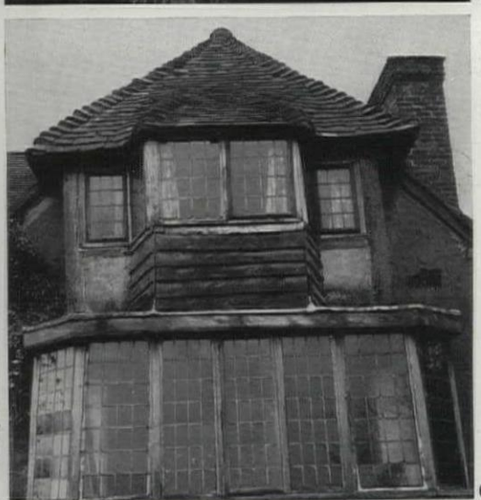

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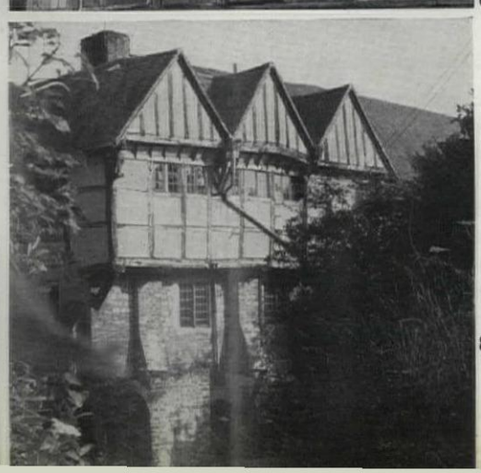

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Meads, the fourth and most sumptuous house, built in 1930, is now utterly desolate. Again it consists of two barns (from Alton), with a long corridor along the entrance front on each floor and, like Overdeans Court, with a panoramic southward view to the advancing villadom of Farnham. The central living room, linenfold-panelled, opens southward to a patterned brick bridge over a swimming pool, now empty; this is overlooked by the arcaded windows of the billiard room, 3, and, to their left, by a crazy balcony to the master bedroom. Even crazier is the western (staircase) end, with its gravity-defying gable, 4, overhanging a fountain of circular basins on different levels, 5, showing Falkner at his most abstract and Expressionist. Close to Meads is Halfway House, derelict for more than a year, which in its exterior is a throwback to Falkner's days as Niven, Wigglesworth and Falkner—the bay windows in particular, 6, which are a rustic version of those made popular for stockbrokers by Ernest Newton. Inside, the house is full of surprising diagonal lines: a double fireplace projects as a triangular promontory from one wall of the living-room and the narrow, twisting lines of the main staircase also recall Expressionism.

The finest house at Dippenhall, is Burles, the sixth, completed in 1937—once again derelict and once again based on two barns (from Gloucester) placed end to end, making what Falkner proudly claimed was the longest overhang in England, 7—a kind of half-timbered millipede. On the west side, a steep drop is answered by an upstanding group of three small gables, 8, with battered buttresses of brick below them, making a magical moated grange, full of those odd projections and inexplicable scraps of miscellaneous material which are to be found in the genuine article. Burles Lodge was built in *c.* 1955 when Falkner was 80. By now he was right out of his period—or any period; and the local council, armed with the battery of post-war byelaws, succeeded in stopping work by alleging that the breeze block foundations were faulty; but the story goes that one of the breeze blocks broke the testing machine, and anyway work went on.

As a boy Falkner had been apprenticed for three years to a local Farnham builder, Thomas Birch, who had built often for Norman Shaw and once for Voysey. His working drawings, paradoxically, were rarely more than scrappy sketches, so Mr. Aylwin tells me; for Falkner superintended his pre-war houses on the site, using the local builders, Mardon & Ball, and after 1925 Mardon's former partner, John Mills. At Dippenhall, however, he built everything himself—all nine houses—helped by two labourers. He had already enjoyed an experience in 'freehand building'; in about 1920 he and Borelli stripped the old Goat's Head pub in The Borough, Farnham, back to its original timber structure (it became the Spinning Wheel antique shop). Falkner developed his remarkable feeling for timber by working in Mardon & Ball's joinery shop. He loved crazy gadgets—hollow floors and walls at Burles, for example, which were

intended to circulate hot air from the central fireplace—and the topsy-turviness seems not just accident, but perversely intended accident ('action architecture.') The Barn settled heavily on all sides soon after being built, the central chimney holding up the roof with daylight round it on all sides. Mr. Aylwin remembers an architectural colleague, after surveying one of the houses, remarking that 'If a mouse jumps through a crack in the wall, one can forget it; but what can be said when the cat jumps through after it?'

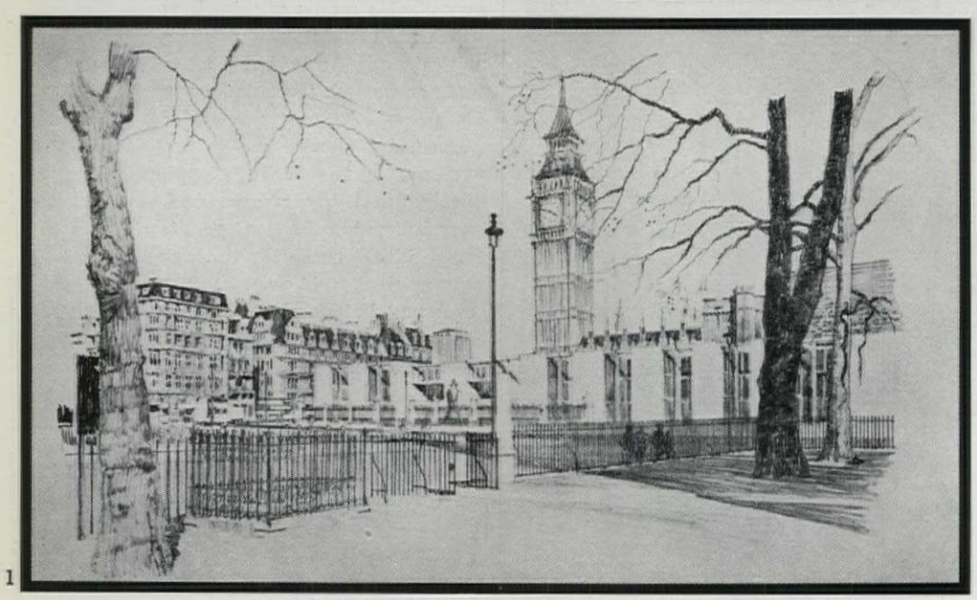
Next to Burles Lodge a 'folly temple' was built, an Ionic porch with broken pediment in the style of *c.*1700, which looks likes genuine material re-used (but one can never tell with Falkner). The other houses are full of bits and pieces; a carved fireplace from a sailing ship at Meads, wheatsheaf sculpture allegedly by Grinling Gibbons at Burles Lodge, Renaissance double doors from Venice and a late medieval lead water-tank at Burles. Grovers Farm, the eighth house, was converted from a condemned cottage with an attached granary. Finally there was Black Barn, left unfinished at Falkner's death; a few months earlier his devoted right-hand worker, Alfred Hack, was killed falling from the scaffolding, almost ninety years old. Before his own death Falkner had his and Hack's two mason's trowels gold-plated and initialled.

Falkner's vocubulary is at first sight similar to the open planning in timber of Baillie Scott (see AR, December 1965) and to the free-style Tudor-cum-vernacular which Lutyens had exploited for similar Surrey landscapes in the late 'nineties. Falkner was indeed a godson of Lutyens's devoted aunt-figure and landscape gardener, Miss Gertrude Jekyll (1843–1932), and he visited her regularly once a month for over thirty years at her Lutyens dream-house, Munstead Wood. It is she who inspired Falkner's uncanny merging of formal parterre with dense wilderness. But where Lutyens stopped short with little jokes at the cosy inhibitions of his clients, Falkner went roaring off into fantasy. His houses were born not just from historical study or from Morris/SPAB respect for the workman's chisel, or from flattery of pastoral-comical stockbrokerly yearnings. They were much more nearly a physical embodiment of the dreams of a king of perspectivists: the crooked lines, the hairy textures, the paradoxes of scale. At a time of paper architecture, when the applause of an Academy private view mattered more than the actual performance on a Surrey hillside, only Falkner had the perverse integrity actually to build his perspectives.

NICHOLAS TAYLOR

ACKNOWLEDGEMENTS: *I am grateful for help from Miss Felicia Cronin, who consulted Miss Beryl Falkner (H.F.'s niece) and Mr. T. A. Luzny (H.F.'s former assistant); from Prof. Nikolaus Pevsner, who let me use the notes of his interview with H.F. in 1960; from Mr. G. Maxwell Aylwin, H.F.'s partner in 1928–31; and from Mr. H. G. Ashton Booth of the Wilmer House Museum, Farnham, where many of H.F.'s best topographical drawings have been preserved.*

EXTENDING THE COMMONS



1

A White Paper* by a select committee of the House of Commons recently proposed that the Palace of Westminster should be extended by an L-shaped block of three and four storeys round the north and west sides of New Palace Yard. Inaccurately described as being in accordance with Barry's original design, this unfortunate scheme appeared to be based almost entirely on the reluctance of Members of Parliament to cross Bridge Street to new accommodation on the other side.

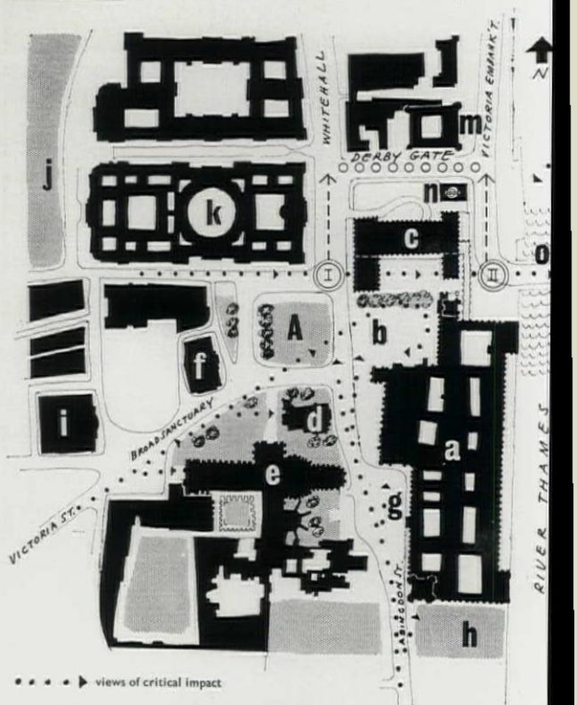
Ignoring the possibilities of closing Bridge Street and thus bringing this other side into the orbit of the Palace, as Sir Leslie Martin suggested in his 1965 report, the committee worked on the assumption that it would always be out on a limb, beyond an impenetrable barrier of traffic. Their scheme, if carried out, would be disastrous to some of the best-loved views in London. At one stroke it would conceal Palace Yard, completely mask the Pugin facade of the Palace (and eventually Westminster Hall) and destroy the memorable impact of St. Stephen's Tower (Big Ben) on Parliament Square. The latter depends entirely on seeing the full height rising from the ground like some giant missile. An illustration in the report, 1, accurately reveals all this. As Sir Leslie Martin and Professor Buchanan made clear in their own report,* it is time to stop looking at the problem in a parochial way and consider it in the larger context of Parliament Square, and traffic-wise far beyond that. By contrast with the scheme just described, which would wreck the present environment, it is worth looking at another solution to the same problem which would not only keep the present townscape, but enhance it. This scheme by Bruce Marsden,† while conceived in terms of the existing townscape, gives consideration to the future context described in Sir Leslie Martin's plan, when ultimately Bridge Street would become traffic-free. A fundamental point of Marsden's scheme (see plan below) is that, if Derby Gate were upgraded to replace Bridge Street, the site immediately to the south, including New Palace Yard and Bridge Street itself, would be released for development. The result of this would be to move the two traffic junctions I and II to the north without serious complication to the

(*continued on page* 162

* Fifteenth report from the Select Committee On House of Commons (Services) Session 1966-67. New Parliamentary Buildings. October 2, 1967.

**Whitehall: a plan for the national and government centre.* By Sir Leslie Martin, accompanied by a report by Colin Buchanan on traffic. HMSO 1965.

† Submitted as a diploma thesis at the Polytechinic School of Architecture and gaining the Bannister Fletcher Prize.



• • • • ▶ views of critical impact

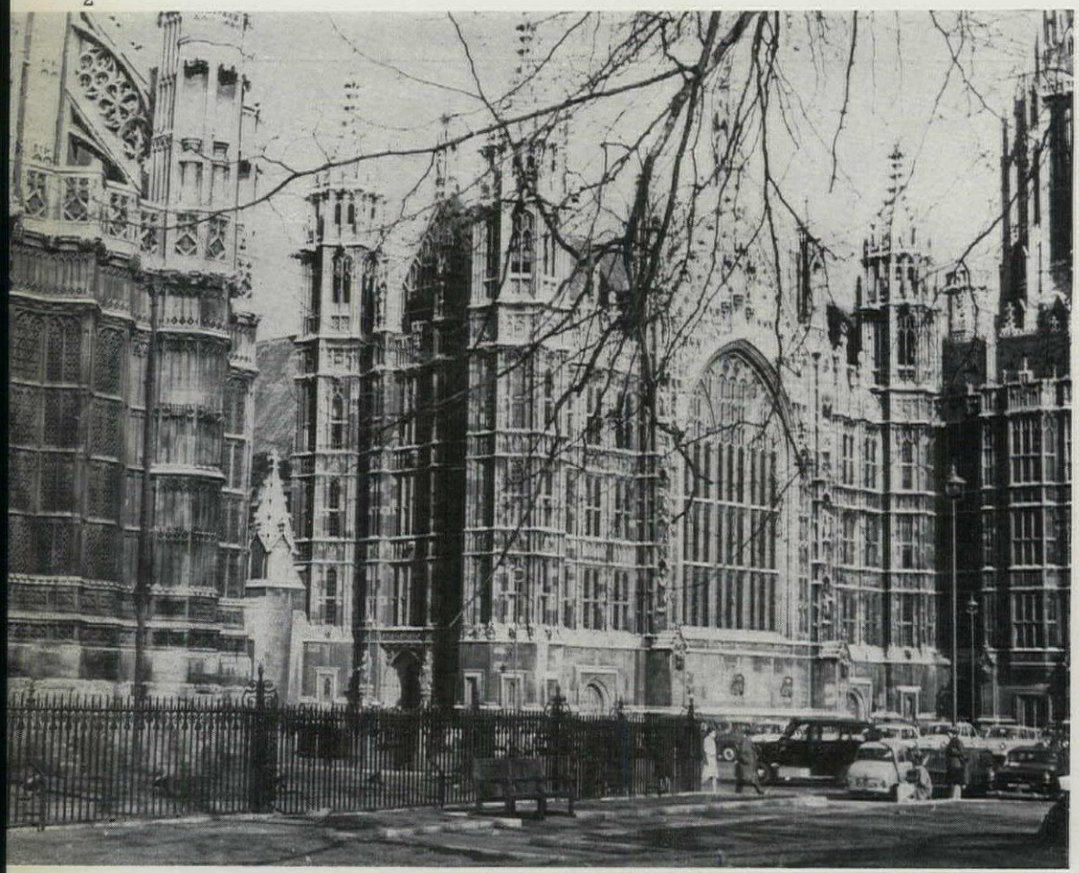
○ ○ ○ ○ course of re-routed traffic

plan of Parliament Square showing Bruce Marsden's proposals for extending the Palace of Westminster

key

A, Parliament Square
a, Palace of Westminster
b, Parliamentary precinct (New Palace Yard)
c, Commons' extension
d, St. Margaret's
e, Westminster Abbey
f, Middlesex Guildhall
g, Old Palace Yard
h, Victoria Gardens
i, Central Hall
j, St. James's Park
k, Great George Street building
m, New Scotland Yard
n, Westminster underground station
o, Westminster Bridge

2



traffic pattern and without losing any building of architectural or historic significance. The two main benefits from this would be that New Palace Yard could be completed as a Parliamentary precinct so that the proposed extension on the Bridge Street site could be seen to be part of it, and the present flabby north-east corner of Parliament Square could be tightened up without losing any of the qualities inherent in having the public square adjacent to the river. Parallels with the Piazza-Piazetta relationship at St. Mark's, Venice, should not be stretched too far here as there is a drop of some 20 ft. to the water and County Hall is no San Giorgio Maggiore. However, space control and articulation with the tower as fulcrum, together with careful consideration of scale, are very much to the point.

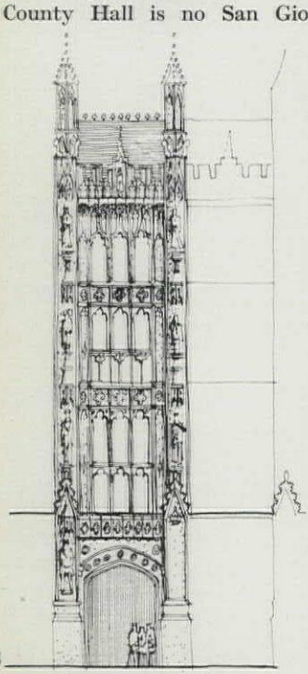
The principal floor of the existing House of Commons is the first, and so, to enable the extension to function with efficiency and security, its principal floor would also be at this level. A bridge, also at first floor level, would link old and new, and the location of this bridge, particularly in relation to Big Ben, would be of prime importance. The visual impact of the almost free-standing tower would be retained from Parliament Square (in contrast to the MPs' scheme first mentioned) and the space between the link and the tower would be clearly seen from the embankments. The existing basement tunnel from the base of the tower would then be free for service access, and a visual bonus would be the closing of the Bridge Street chasm when viewed from Westminster Bridge. Though from here the effect of the tower pinning down the springing of the bridge would be reduced, the proposed open-sided square would act as a landing platform for it.

The visual success of an extension so planned would depend upon its bulk in relation to the other buildings and upon its particular relationship to the design detail of the Palace. The origins of the Barry/Pugin facade treatment (1834 onwards) are apparent in 2, where the Henry VII Chapel of Westminster Abbey (largely rebuilt 1807–22) is closest to the Palace—at the south end of Westminster Hall. Here the discipline is announced and also the degree of freedom within it. From an analysis of the existing facades, particularly the New Palace Yard wing, Mr. Marsden developed the form of the proposed new building. A number of factors then became apparent: notably a grid of about 16 ft., an arcade and an ornate yet strong treatment of the fabric (compare 3 and 4).

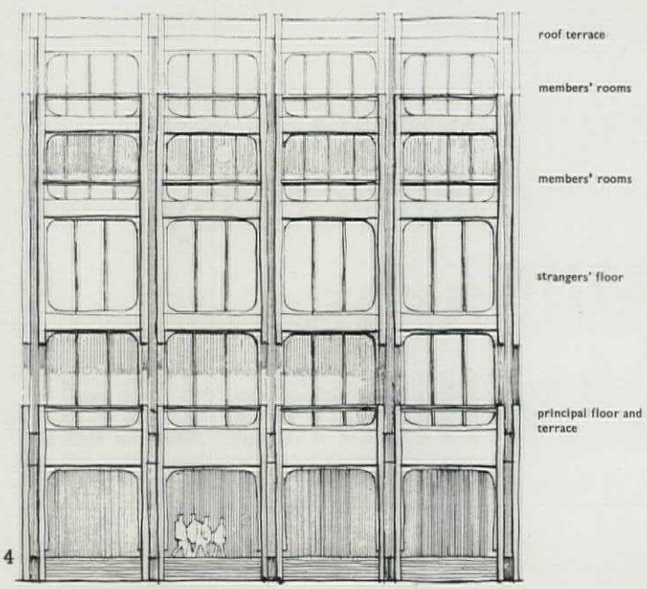
The underground railway posed the greatest physical problem, for while the station can be removed to the north, the tunnel must remain. However, the enclosing structure of the tunnel could be used to hang a ramp on, and this would serve a three-level car park on each side of the tunnel. In this way the elements producing vibration problems would be isolated and the Parliamentary precinct, clear of cars, would be ready to take its place in what ought to be the traffic-free context of the Square.* The Parliament Square corner of the extension would be of strategic importance in views towards the Parliamentary precinct. By leaving both ground and first floors clear of buildings but defined by columns, the present hint of the river viewed along the axis of Great George Street would be retained. It is at this corner that the public entrance would be sited. Members would enter the extension by way of the link to the major committee rooms, dining and bar facilities on the principal floor. The public, entering at the opposite end of the building, would leap-frog over the members' working floor to the second floor and proceed to galleries set within the double-storey height committee rooms. This separation would be necessary to provide proper working conditions for members and officers of the Commons.

Visually not only should the extension be seen to be part of the Parliament precinct from the outside, but the connection would need to be evident from the inside as well. To achieve this, the main circulation would be along the south face of the building, with views across from the north side through courts and lounges on the upper two floors (where the 240 individual Members' rooms would be

(*continued on page* 164



3 existing facade treatment to New Palace Yard



4 suggested facade treatment of new building

* See 'West End 6: Civic and Government', by Kenneth Browne. AR, May 1967.

located). The new buildings would also contain a new Stationery Office, broadcasting studios, offices for the Parliamentary Commissioner ('Ombudsman'), 'shadow' ministers' rooms and a Secretariat (a total area of about 120,000 sq. ft. excluding a park for 600 cars).

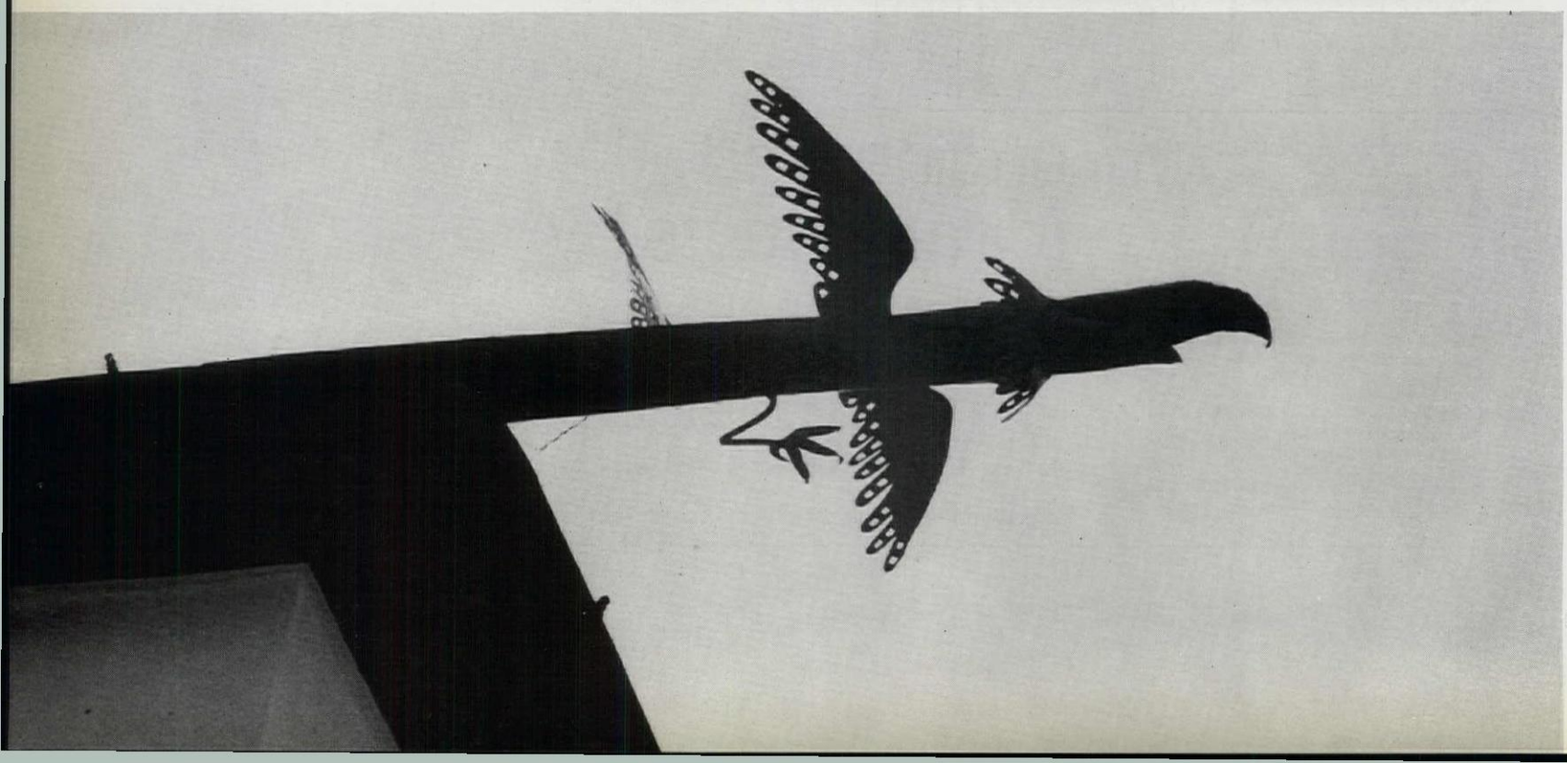
POSCHIAVO

Poschiavo, or Das Puschlav, is the name of a district, a river, a lake and a town. Lying on the southern slopes of the Swiss Alps between St. Moritz and the Italian border, the beautiful valley winds through the mountains below the Bernina Pass. The 3,900-metre Piz Palu dominates the snow-covered range to the north; and the Poschiavo Lake at the southern end, only 500 metres above sea level, has a climate so mild that chestnut trees grow by the roadside, tobacco and carnations in the fields and vineyards yielding Yaltellina wine cover the slopes nearby.

The little town of Poschiavo, with only 2,000 inhabitants, is entirely Italian in feeling and has extraordinary architectural interest for so small a place. There are graceful seventeenth-century houses in the main square, an Abbey church of San Vittore, built in 1497 by A. Bohler, with a good portal and a rose window and a heavy slate roof in the traditional style. The tower, 1, has a neat arrangement of windows, five in the two top tiers, four in the next two, then two, then one. The building was finished in 1503 by Sebald Westholf. Opposite the church is a curious baroque-style chapel and ossuary called Santa Anna, topped with an octagonal cupola; and on the near right of the chapel is a house with unusual water spouts, 2, jutting out from the roof, basically formed like mountain crows or choughs.

PENELOPE REED

1



2

The Industry

1

New Hille arm chair

Hille's 1963 polypropylene chair, designed by Robin Day, should be pretty well known to most AR readers, who will be interested to see the armchair model, by the same designer, which was introduced towards the end of last year. The cheapest version, with a simple tubular frame, is £6 compared with £3 3s. for the older armless stacker, although it carries purchase tax. The width between arm rests is 24½ in. and multiple benches with from two to six shells mounted either on black stove enamelled steel strap or polished aluminium are available. The single shells are made on a variety of bases, including a swivelling chrome-plated pedestal which runs on orbit casters and is adjustable for height, 1. Complete with upholstery the retail price is £28 12s. There is also a skid frame of chromium-plated rod which will slide over carpet and at the same time not sink into a soft lawn. The shells are made in charcoal, red, light grey, and a relatively new colour, dark blue. The chairs are suitable for any climate both in and out of doors, though for lengthy exposure to strong sunlight only the charcoal shell is recommended.
Hille of London Ltd., 41 *Albemarle Street, London W*1.

Kitchen cabinets in metric sizes

Nordia kitchen cabinets, 2, are now being made in this country and are based on a 10cm. module, but sink units 42 by 21 and 63 by 21 can be supplied if metric sizes are not suitable. Carcassing and doors are made from two layers of hardboard separated by a layer of Dufaylite honeycomb paper mesh. There is a choice of floor and wall cabinets as well as tall (90 in.) cupboards with shelves or drawers. All the shelves or drawers run on nylon coated steel rails which can be easily removed for cleaning. The rails fit into holes predrilled in the sides of the cupboards and the holes can also be used to carry a wide range of accessories in plastic coated wire to take such things as buckets, soap powders, plates or cleaning materials: there are also various plastic drawer liners moulded for the storage of cutlery or kitchen utensils. All doors are on nylon hinges and lift off, and can also be supplied right or left hand. Standard colour is a bamboo yellow, though work tops can be in any of nine Arborite laminates and have a 4 in. splash back. The units are supplied in knocked down form and are easily assembled as all screw holes are predrilled: doors are supplied sheathed in polythene which is left on until the units are used. The Scandia sink units are also made with a strippable plastic coating.
English Rose have also introduced a metric range with a standard unit width of 500 mm, slightly less than the normal 21 in. and a depth of 600 mm. to give a working surface which is deeper from back to front. Workstop height is 910 mm. plus a 45 mm. upstand at the back. There is a choice of six colours or white for the work tops and the cabinets have a natural walnut veneer. Corner units have revolving shelves or swing-out trays: base cabinets are mounted off the floor on legs or the space can be filled in with a plinth giving toe space. Cupboard interiors, 3, pull out on ball bearing runners and have hardwood inner frames. Access to the shelves is therefore easy and the available fittings include drawers, wire trays, bottle racks or a waste container with a lid which lifts automatically. Floor cabinets can be arranged to take cooker hot plates and the taller units will take built-in ovens or refrigerators.
The third firm to go metric is Wrighton, who have produced a range on a 100 mm. module width, which is used in multiples of four, five, six, eight, ten and fifteen. Base units are produced in two depths 500 mm. (19 $\frac{11}{16}$ in.) and 534 mm. (21 in.) and both can be extended to 600 mm. (23⅝ in.) by using an over hanging work top and end extension pieces. The cabinets and work tops can be made to take built in washing appliances and cooker hob plates or boiling rings and ovens. The photograph, 4, shows a waste bin with a self-opening lid fitted to a door interior and a work top cut away for a floor standing refrigerator. Cabinets have flush interiors and are drilled for bolting together on site and exposed edges are plastic faced to prevent moisture penetration. Doors have concealed hinges, nylon catches, and anodised aluminium handles. There is a considerable choice of colours for door fronts and work surfaces, which are in laminated plastic.
Nordia (Sales) Ltd., Hilsea Industrial Estate, Portsmouth.
English Rose Kitchens Ltd., Warwick.
F. Wrighton & Sons Ltd., 3 *Portman Square, London W*1.

2

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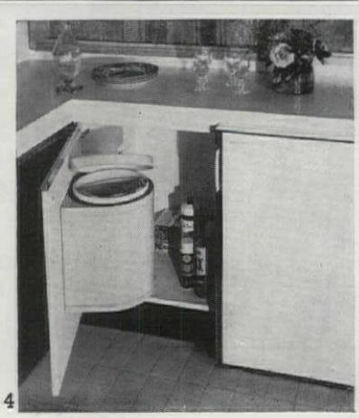


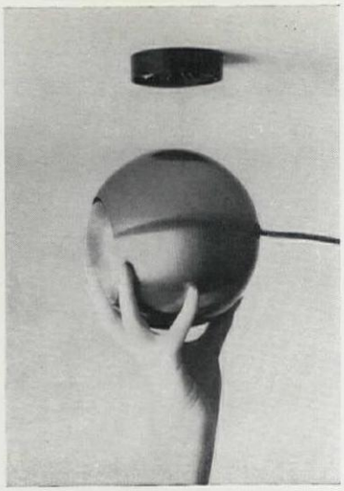
4

Display lighting spotlight

Spotlight fittings for display lighting have become increasingly popular during the last few years but suffer from the disadvantage that when the direction of the spotlight beam has to be changed it is often necessary to fiddle with wing nuts or other forms of friction adjustment which in themselves tend to be unsightly. Falks seem to have found the simplest of answers in the Magnadjust, a spherical fitting for 75 or 100 watt lamps. The sphere is a mild steel spinning with a brushed and lacquered finish, 5. The support is a 3½ in. glass fibre reinforced nylon assembly which houses a series of eight separate magnets, the magnets being set to the radius of the sphere, which is thus infinitely adjustable, whether mounted on ceiling, wall or floor. The magnets are not visible and the sphere appears to be fixed with a circular collar. Price is only 78s.
Falks Ltd., 91 *Farringdon Road, London, EC*1.

Lead cladding

Lead is a traditional cladding material which has, of course, been used for several hundred years and can be fixed so as to accommodate any effects of thermal movement,



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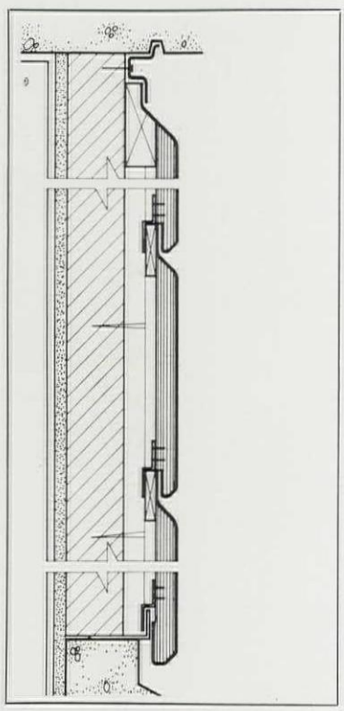
but is now being used in the form of prefabricated panels. The Lead Development Association has recently issued a booklet showing several examples carried out during the past two or three years. Either 4 lb. or 6 lb. lead is generally used, in panels of not more than 24 sq. ft., or 8 ft. in any dimension, though it may sometimes be advisable to reduce these figures for ease of handling. The section, 6, shows prefabricated panels made from 1 in. external quality plywood faced with 4 lb. lead and used for window spandrels and tank room facings in a study bedroom block at St. John's College, Cambridge (architects, Powell & Moya). The panels, 1 ft. or 1 ft. 3 in. deep, were formed by dressing the lead round the plywood and fixing at the back with copper clout nails. Finish at the sides of panels is generally by a lead strip fixed before the panels with the outer edge turned and wedged into a groove in the concrete.
Lead Development Association, 34 *Berkeley Square, London W*1.



Long spans in steel tube

At a recent conference organised in London by CIDECT, The Comité International pour l'Etude et le Developement de la Construction Tubulaire, consideration was given

[continued on page 168

7

continued from page 166]

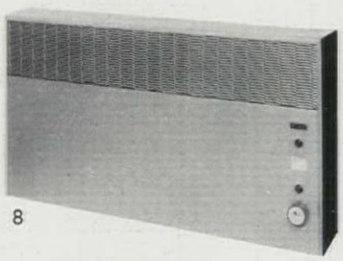
to large span structures and it was suggested that spans up to 1,000 ft. should be possible with an overall weight of 18 lb. per square foot. Mr. Taylor, of Stewarts & Lloyds, showed a half model, 7, of a structure suitable for covering a football pitch. This consisted of a series of 800 ft. span two pin arches giving a clear height of 160 feet, the arches being joined by a two way space structure as an infilling grid. Tubular structures with very large spans can be built economically and quickly with high quality welding and workmanship, and it is claimed that costs are lower than with conventional steelwork, particularly since hollow sections are now readily available in high tensile steel. Since the dome at Houston, Texas, with a span of nearly 650 ft. covers some 9½ acres, there seems little reason why larger structures should not be possible, and it is suggested that future Olympic Games could well be held under cover with roofs spanning 1,000 feet or more. Buildings for Test matches will presumably incorporate computer controlled random selection equipment for the provision of bad light and/or rain.
Stewarts & Lloyds Ltd., 118 *Park Street, London W1.*

Insulated roof lights

Anderson's Dalite roofing panels, made with two skins of glass fibre polyester sheeting, have already been mentioned in these notes. There is now a three-skin version, Supa-Dalite, which has a U value of 0.3 and is made in a width of 4 ft. and in lengths up to 12 ft., though other sizes can be supplied. The panels are suitable for flat or sloping roofs and particularly for lightweight decks where the lights replace panels of wood wool, strawboard or similar 2 in. thick roofing materials. The top and middle skins of the lights are separated by spacers and the bottom skin is joined to the middle one at the perimeter to form a sealed cavity. Skins and spacers are bonded together to form a composite unit with a continuous 3½ in. wide fixing flange all round the edge. Mechanical fixings can be used, though the material bonds readily with hot bitumen or mastic asphalt. The fixing flange is level with the middle skin so that the top of the light is 2 in. proud of the roof and the lower part lines up with the soffite of the slabs. The upper air space extends 2 in. beyond the lower to prevent condensation, and there is no cold bridge between the light and the roof structure.
D. Anderson & Son Ltd., Stretford, Manchester.

Fan convectors

The new Myson Estate range of convector units, 8, has been designed



8

mainly for local authority work and private housing developments with small bore heating systems. Hot water is circulated through a finned heat exchanger and a quiet tangential fan draws in air through a cellular filter and over the heat exchanger to discharge into the room through the grille at the top. There is a fan speed control to adjust the volume of heated air and this can also be connected to an adjustable room thermostat. Heat output also depends, of course, on boiler temperature. There is a low limit thermostat to prevent air circulation until the water is up to temperature, but this can be by-passed to circulate cool air in summer. The convector is made in three models with outputs of 9,000, 14,000 and 20,000 Btu/hr.
Myson Heat Exchangers Ltd., Ongar, Essex.

Contractors

University Centre, Cambridge. *Architects:* Howell, Killick, Partridge and Amis. *General contractor:* William Sindall Ltd. *Sub-contractors: Glass and glazing:* Mustill Wallis & Co. *Asphalte roofing:* Lawford Asphalte Co. *Hardwood strip flooring:* Hollis Bros. Ltd. *Plastering:* G. Cook & Sons Ltd. *Lead roofing and cladding:* Anglia Sheet Lead Casting & Metal Roofing Co. *Roof paving:* Austin Wall & Floor Tile Contractors. *Roof lights:* The British Challenge Glazing Co. *Suspended ceilings:* Clark & Fenn Ltd. *Sisal carpets:* Conran Contracts Ltd. *Metal screens:* The Cotswold Casement (Engineers) Ltd. *Bri-Nylon carpet:* Cresta Carpet Co. *Fire extinguishers:* Dunford Fire Protection Services Ltd. *Vinyl tile flooring:* GC Flooring Ltd. *Internal timber doors, screens, partitions, bars, etc.:* Shop Fitting Consultants. *Lifts:* Kone England Ltd. *Electrical installation:* Mann Egerton (Electrical) Ltd. *Kitchen canopy covering:* H. C. Nunn. *Cold room:* Pressed Steel Commercial Refrigeration (Southern) Ltd. *Metal spiral staircase:* Safety Tread Ltd. *Mirrors:* Steele's (Contractors) Ltd. *Kitchen equipment:* James Stott Co. (Engineers) Ltd. *Venetian blinds:* Tidmarsh & Sons. *Stone cladding:* Wandsworth Stonemasonry Works Ltd. *Metal windows:* C. E. Welstead Ltd. *Mechanical installations, hot and cold water, sanitary fittings, etc.:* J. Wontner Smith Grey & Co. (Heating 1964) Ltd. *Ironmongery:* G. & S. Allgood Ltd. *Louvre windows:* N. V. Appleton (U.K.) Ltd. *White partition blocks:* Forticrete Ltd. *Structural precast concrete:* W. & C. French Ltd. *Non-structural precast concrete:* Sindall Concrete Products. *Woodwool roof panels:* Halcrete Panels Ltd. *Metal door frames:* Henry Hope & Sons Ltd. *Laminated timber roof:* Laminated Wood Ltd. *Glass sliding windows:* Leyland Sliding Windows Ltd. *Prestressing equipment:* McCalls Macalloy Ltd. *Door mats:* The Royal National Institute for the Blind. *Bricks:* Sussex & Dorking Brick Co. *General materials:* Pratt (Watford) Ltd., Cyril Sigeon & Son Ltd.

Royal Lancaster Hotel, Bayswater, London. *Co-ordinating architects for the interior:* Cassidy, Farrington and Dennys. LOOKING GLASS RESTAURANT: *Architects:* Leonard Manasseh & Partners. *Sub-contractor:* Ashby & Horner Ltd. *Carpets:* Blackwood Morton & Sons Ltd. *Electrical work:* Troughton & Young. *Light fittings:* Malham Photographic Equipment Ltd. *Marble:* J. Whitehead & Sons Ltd. *Mirrors:* James Clark & Eaton Ltd. *Dining chairs:* Peregrine, Wilkocks & Co. *Loose bar chairs:* OMK Limited. *Dining tables:* Westnofa (London) Ltd. *Louvredrape blinds:* Stilsound Blinds Ltd. *Ceilings:* Star Ceilings Ltd. *Refrigerated buffet:* Metropolitan Refrigeration Ltd. FOYER AND RECEPTION AREAS: *Architects:* Gordon Bowyer & Partners. *Sub-contractors: Suspended ceilings:* Clark and Fenn Ltd. *Acoustic treatment to suspended ceilings:* Pyrok Ltd. *Ventilated tiled ceiling:* Star Ceilings. *Stainless steel column casings and framework in flower shop:* Culford Art Metal Co. *External glazed screens and doors:* Allan H. Williams (Chester) Ltd., Glass (Coventry) Ltd. *Internal metal framed glazed screen and doors; showcases; teak panelling and joinery fittings:* Samuel Elliott & Sons Ltd. *Terrazzo:* Zanelli (London) Ltd. *Marble (filled Travertine Mera):* J. Whitehead & Sons Ltd. *Fire shutter:* Dennison Kett & Co. *Bar shutter:* Rely-A-Bell. *Electrical installation:* Troughton & Young. *Air conditioning:* G. N. Haden & Sons Ltd. *Carpets:* Rank Audio Visual. *Lifts:* Waygood Otis. *Signs and lettering:* Pearce Signs. *Canopy fascia and framing:* Triple H K Engineering Construction Ltd. *Plumbing:* J. C. Spooner & Son Ltd. *Mirrors:* James Clark & Eaton Ltd. *Rubber mat:* Runnymede Rubber Co. *Ironmongery:* G. & S. Allgood. Ltd. *Stair handrail:* Grundy Arnatt Ltd. *Loudspeaker installation:* Westrex Co. *Curtaining:* Interiors International. *Furniture:* Design Associates; Interiors International; Hille of London PRIVATE DINING ROOMS: *Architect:* Margaret Casson. *Main joinery contractor:* Ashby & Horner Ltd. *Sub-contractors: Sliding folding doors:* Esavian Ltd. *Electrical work:* Troughton & Young Ltd. *Heating and air-conditioning:* Haden & Sons Ltd. *Ceilings (fibrous plaster):* Clark & Fenn Ltd. *Wall covering:* ICI Vynalast. *Laminated plastic:* Formica. *Carpet:* BMK Carpets. *Chairs:* Conran. *Tables:* Antiok Lairn. *Curtain fabric (glass fibre):* David & Dash from Ian Sanderson. *Door furniture:* G. & S. Allgood Ltd.

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FEBRUARY

76

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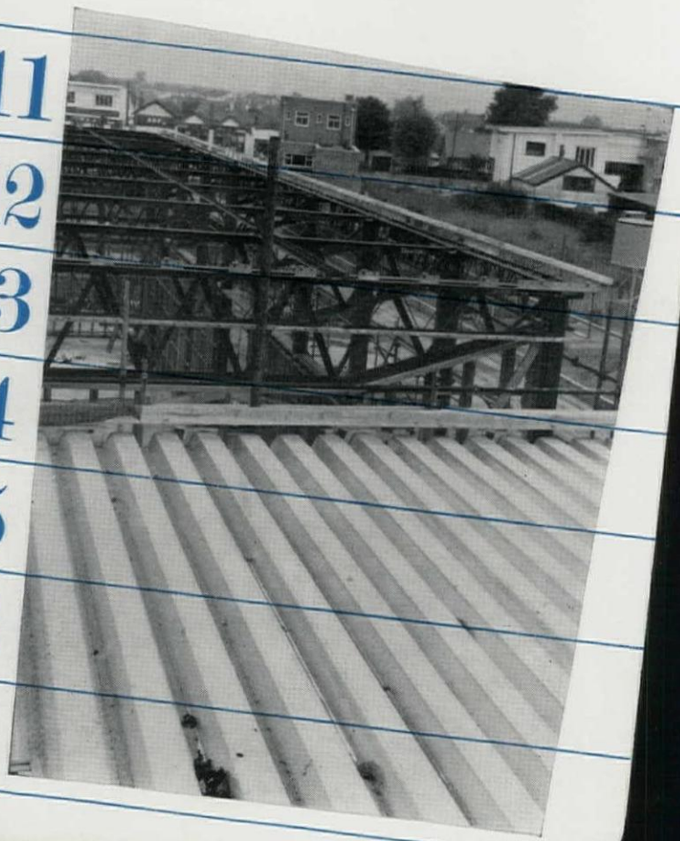
FEBRUARY



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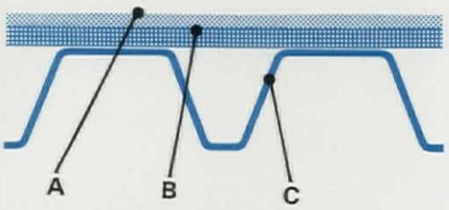

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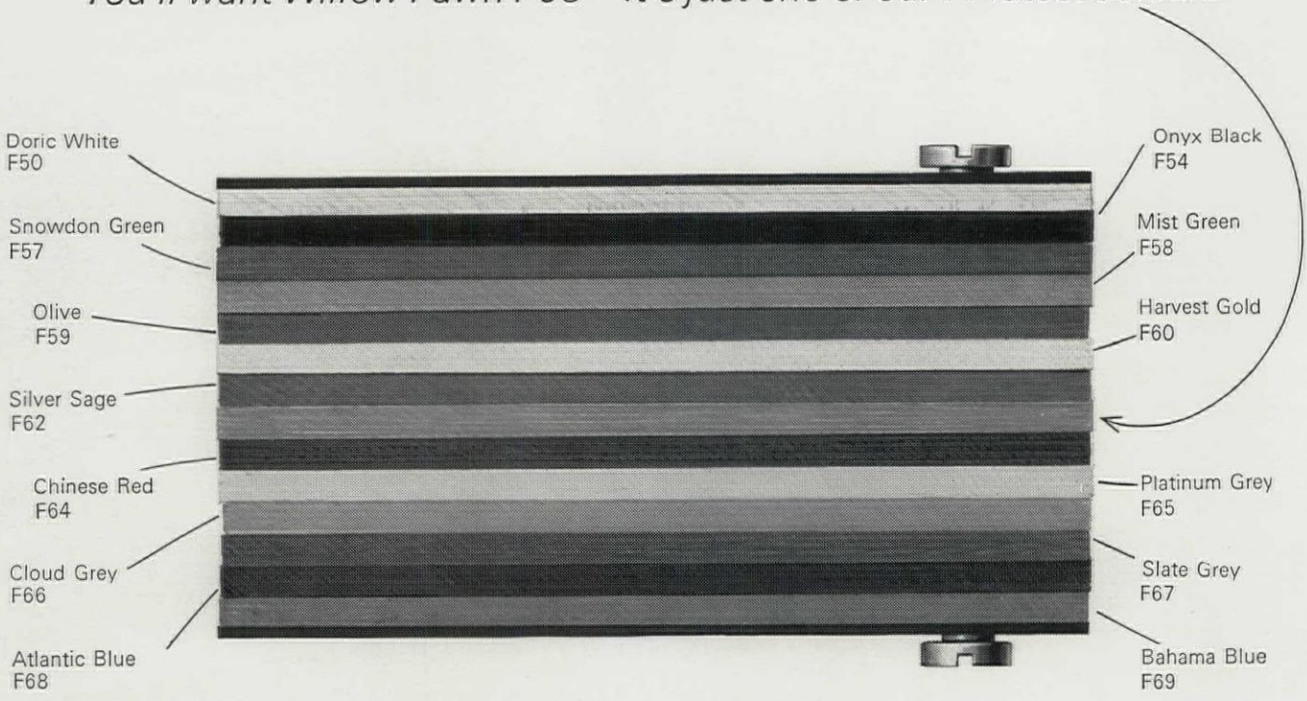

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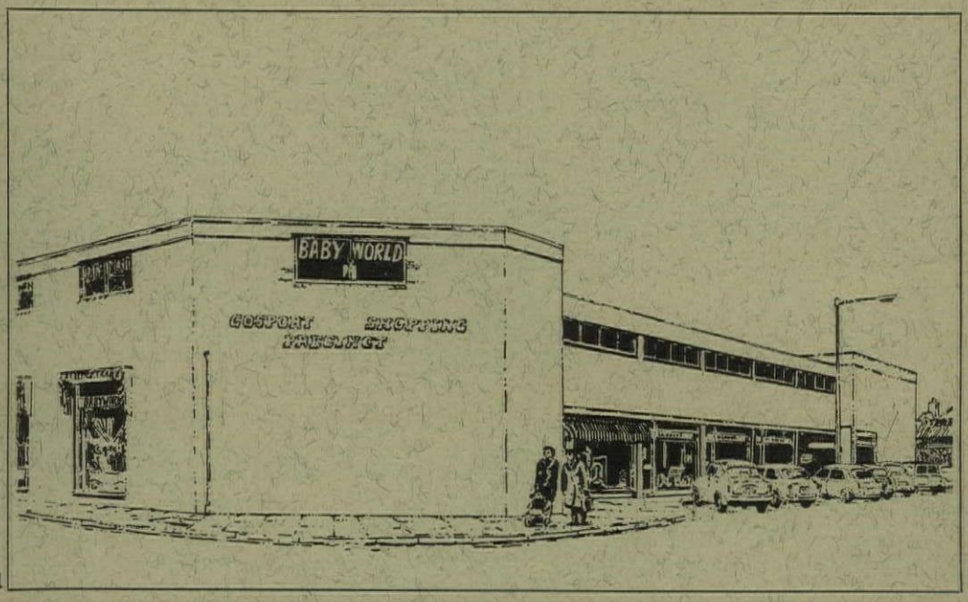


1

OUTRAGE

GOSPORT, HANTS.
The latest bit of modern fun from the town which demolished most of its ancient building, 1. Baby-world, indeed.

POITIERS, FRANCE
Just to show that other countries have their failures too, 2. This is in the main square of a decidedly historic town.

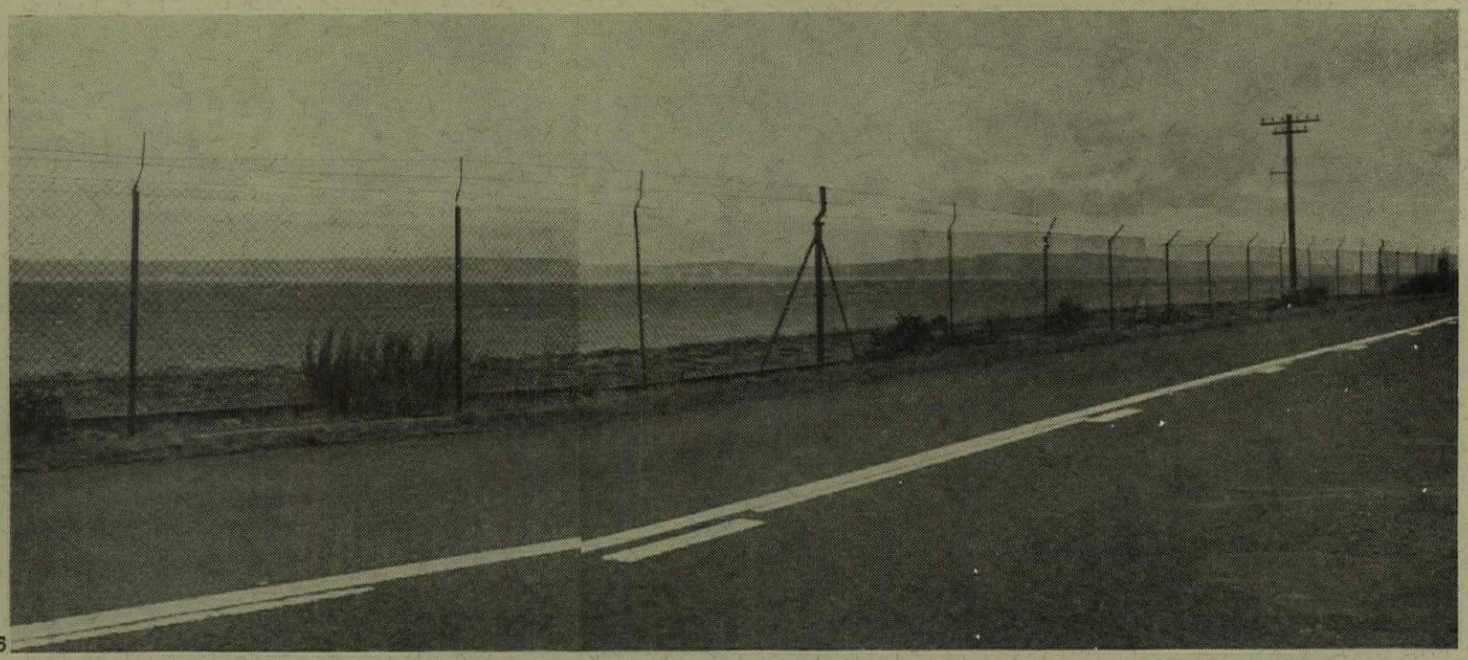
2


3

NEAR DRIFFIELD, YORKS E.R.
From the nonsense department: 3, one of a series of concrete posts stuck into the ground beside an open field, miles from the nearest village, to ensure that not one yard of sacred County Council property goes under the plough. The East Riding is quite rich in this kind of thing.

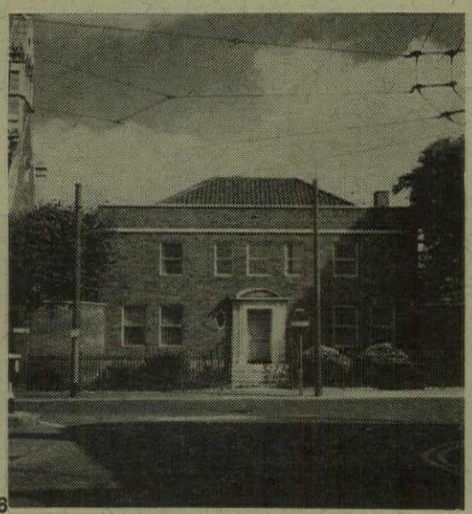
AYRSHIRE AND WIGTOWNSHIRE
Two bonny Scots' ways with the coastline: bludgeon it with caravans, 4, which are occupied for three months but


4



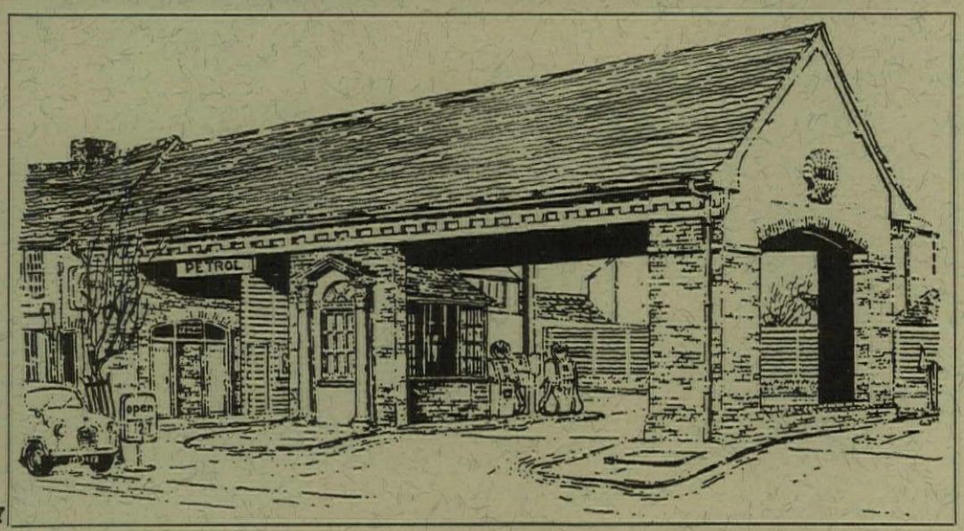
5

occupy the landscape for twelve, or simply fence it off altogether, 5, in case someone enjoys himself. The caravans are in Ayrshire, the fence runs for several miles along the shore of Loch Ryan, Wigtownshire.



6

READING
Greyfriars Vicarage, 6, a genuine Soane building rebuilt neither as a replica nor something genuinely new—nor even something wittily new-and-old—but simply a lump of stodge as meaningless as the preamble to an official report or a citation. Give it the O.B.E. at once.



7

CAUTION

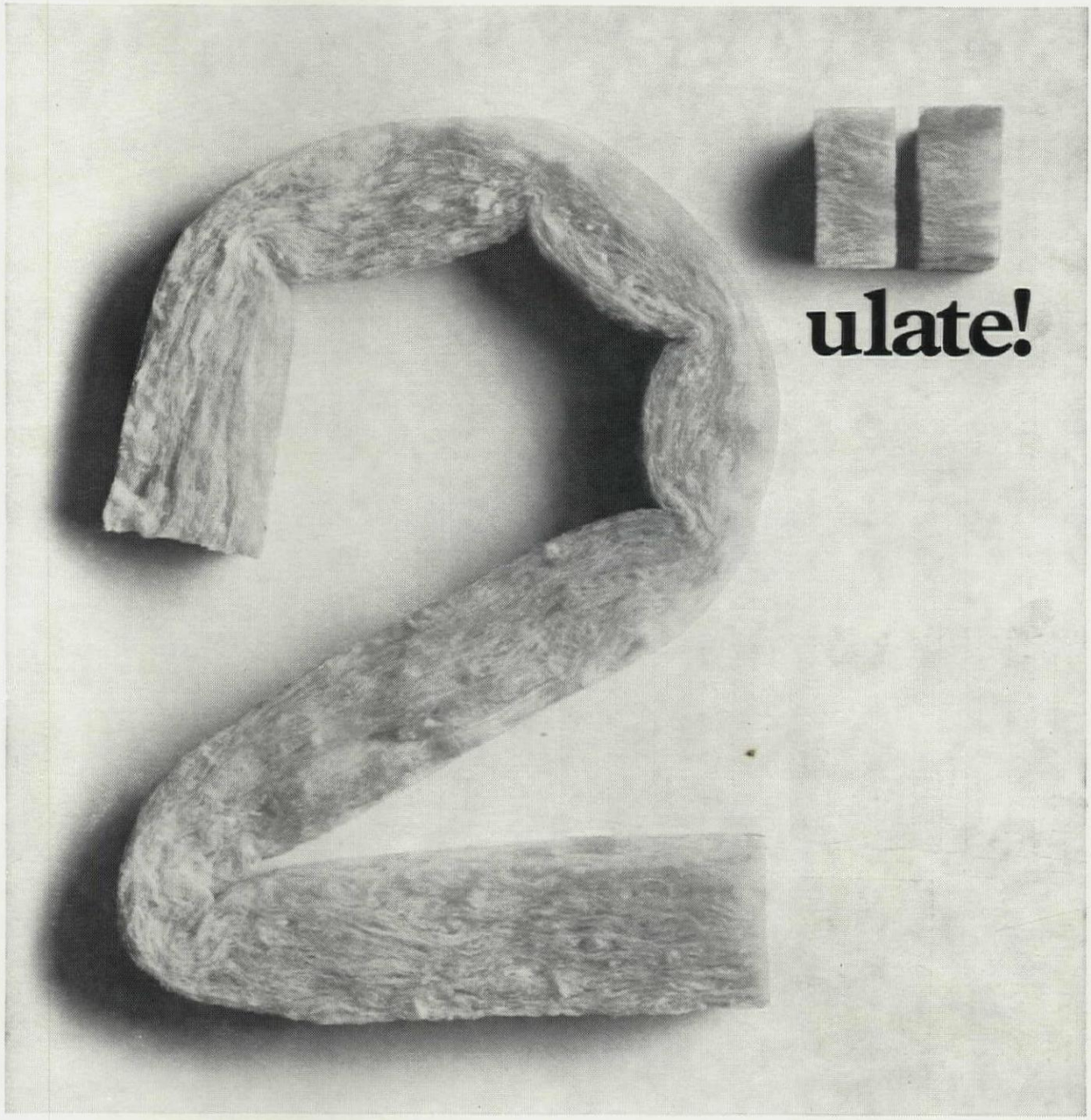
HUNGERFORD, BERKS.
An odd mixture of good and bad in the main street, 7. Good to preserve the street line by converting cottages into a petrol station in a way which has intriguing townscape qualities: see-through where you expected solidity, a scale which has been doubled and yet remains the same. A pity to spoil the effect right at the end with the ostentatiously Georgian doorcase.

OPPORTUNITY

EASTBOURNE, SUSSEX
The Star Brewery, in the centre of the old town, 8, has been taken over by Courages, who will only need a small part of the site, dotted in 8. The rest could be developed as one unit of flats and shops on the pattern of Brighton Square, keeping existing buildings of value such as the Court House, 9, and integrating them into the scheme.

8

9



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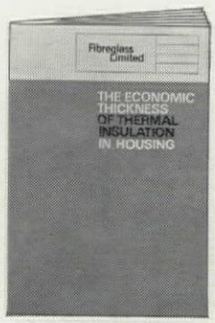

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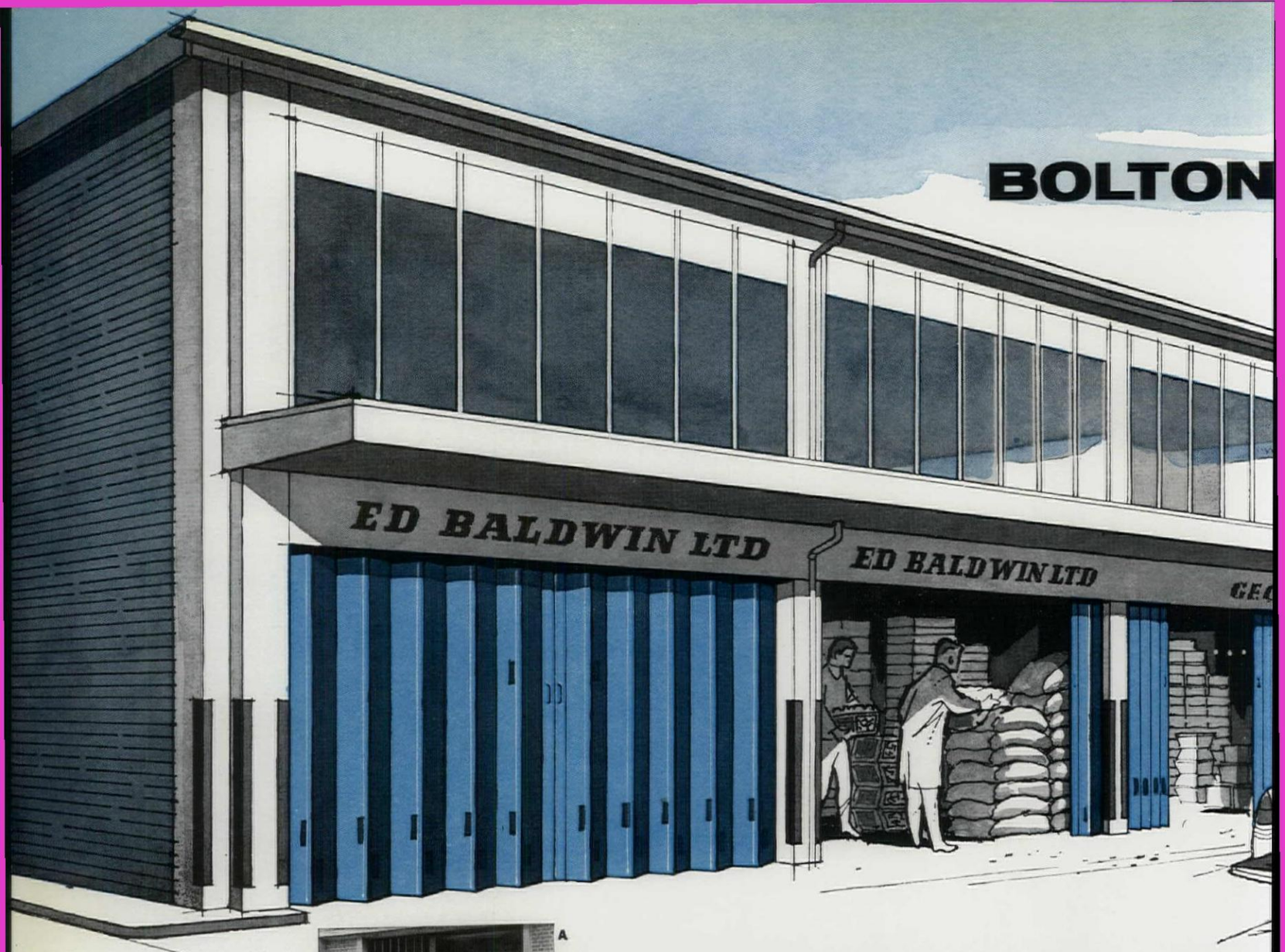
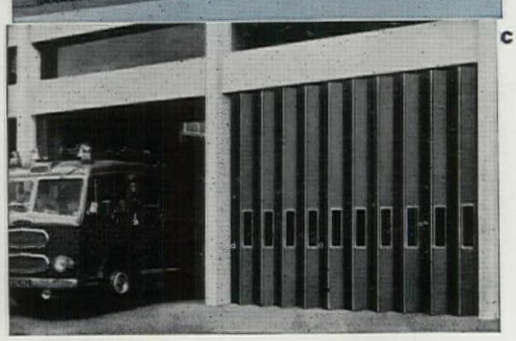


A

B



C

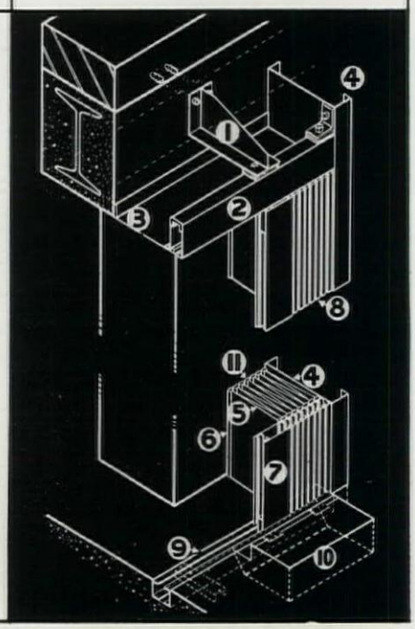
A *A factory installation of Bolton photo-cell controlled Shutter Doors.*

B *Bolton Shutter Doors installed in BEA Freight sheds, N. Ireland.*

C *Bolton Electrically operated Shutter Doors at Shoreditch Fire Station. Architects : Architect to the Greater London Council, Hubert Bennett, F.R.I.B.A.*

This isometric drawing shows the ideal fixing for Bolton Shutter Doors. Suspending the box track from the inside face of the lintel allows the doors to bunch clear of the opening by folding behind the walls. The cover plate (3) and the end panels (4) make the installation draught-resisting.

1. Welded mild steel suspension bracket.
2. BOLTON patent, totally-enclosed box-type top track.
3. Mild steel cover plate for the exclusion of draught.
4. Mild steel end panels.
5. 16's gauge (1.63 mm.) mild steel shutter leaves, Sherardised against corrosion.
6. Non-ferrous hinging strip.
7. Rigid front to accommodate locking arrangement.
8. Steel pickets on which the door is built.
9. Self-cleaning bottom track, built up from rolled steel channels.
10. Mild steel sump-box with hinged lid to facilitate cleaning out.
11. Shutter leaves rolled round $\frac{1}{8}$" (3.2 mm.) diameter wire reinforcement to give great vertical strength.



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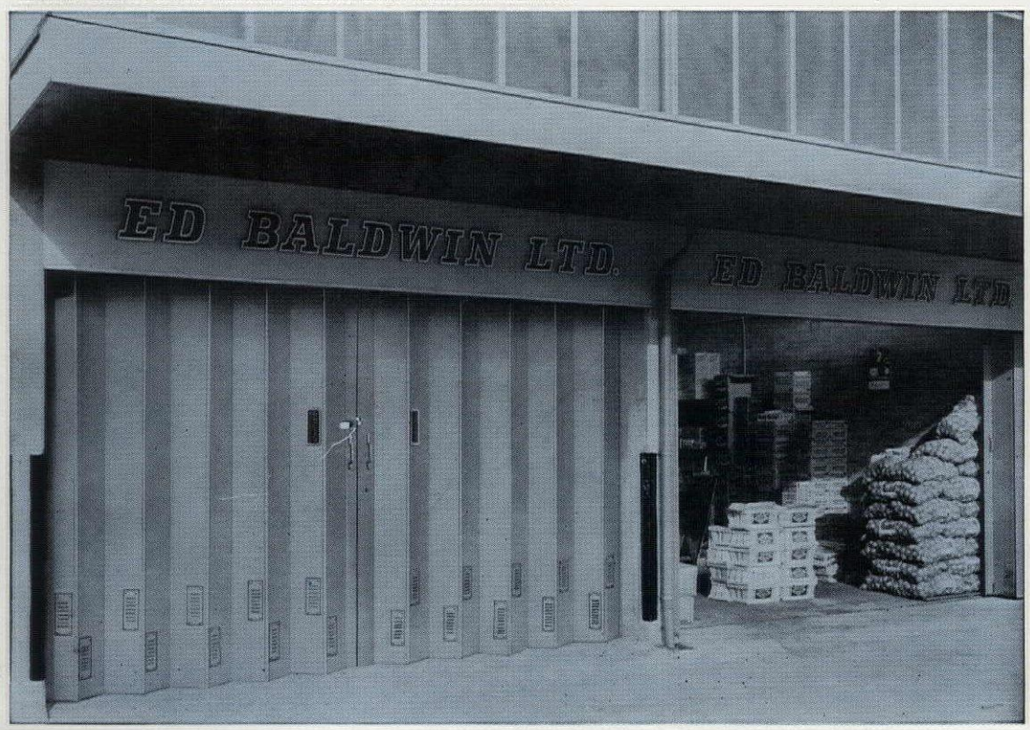

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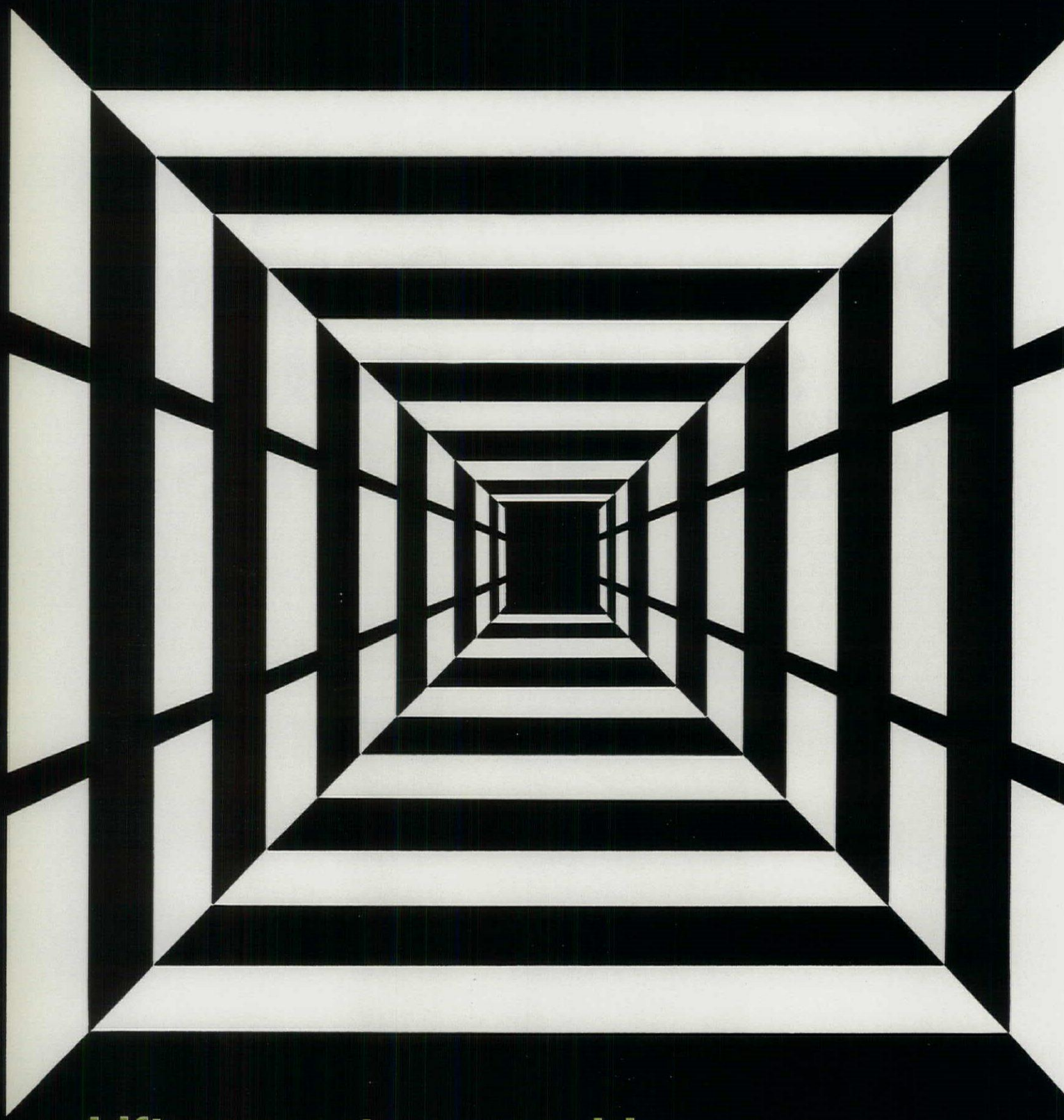

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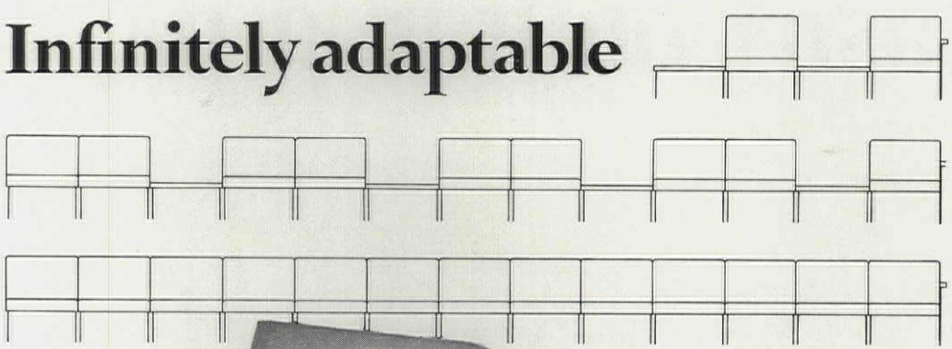

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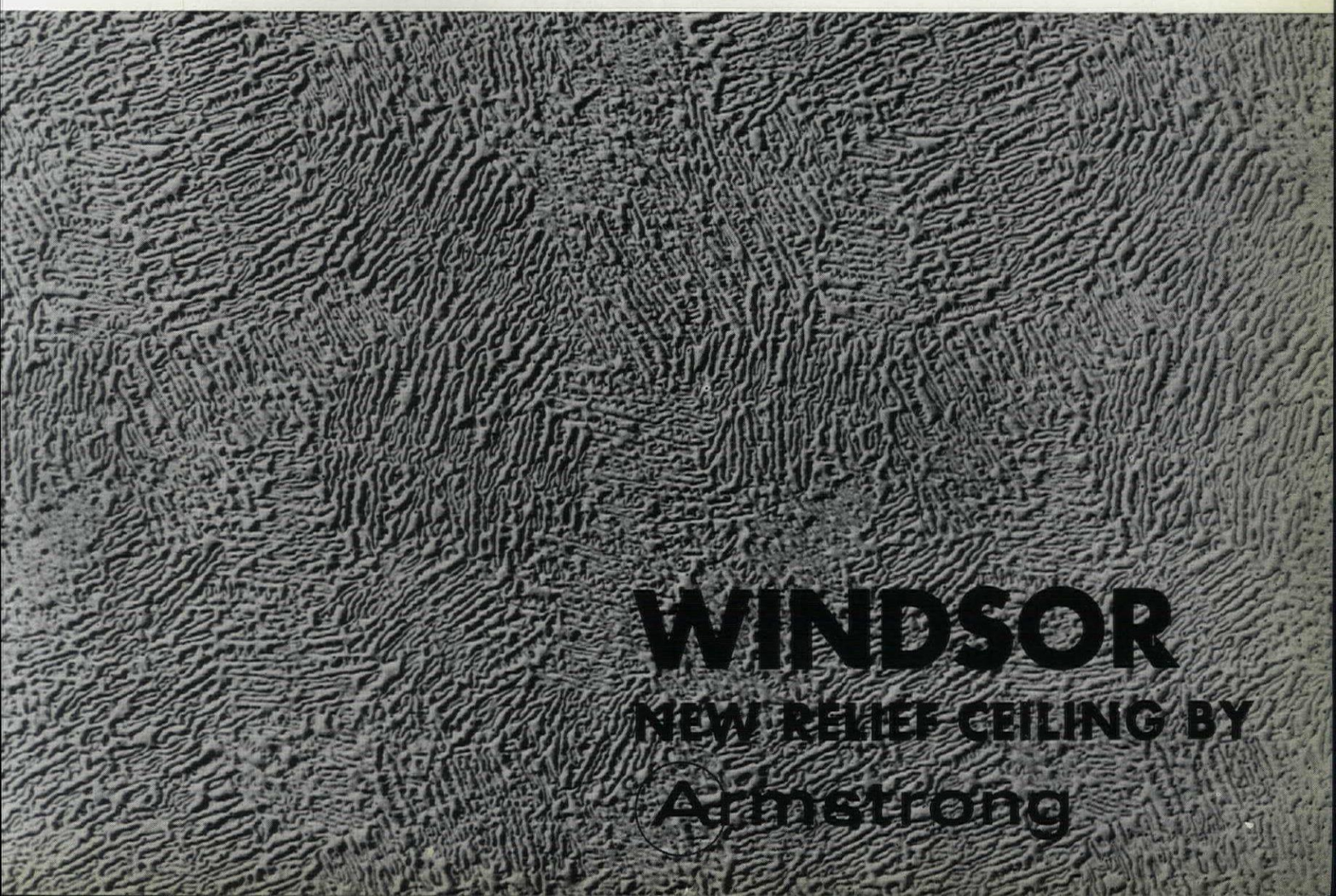

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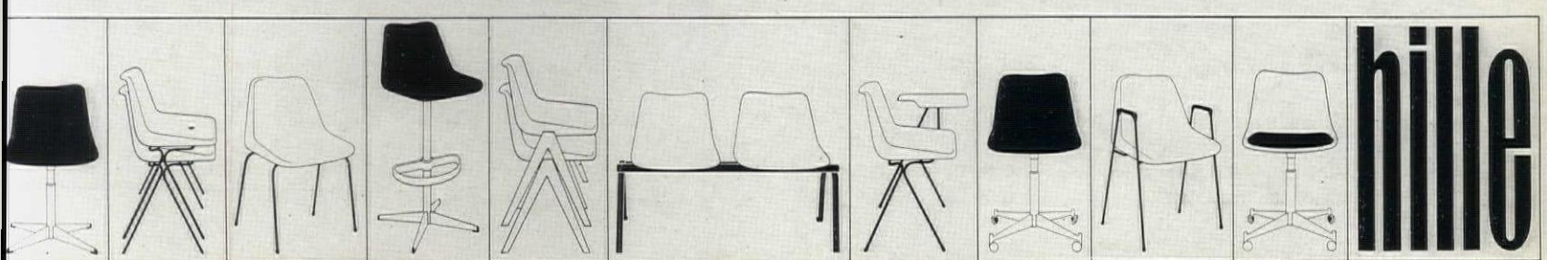

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